ABSTRACT OF

A Clinical Lecture

ON

SOME POINTS CONCERNING THE VARIETIES AND DIAGNOSIS OF INGUINAL HERNIA.

Delivered at the London Hospital on Nov. 23rd, 1898,

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GENTLEMEN.—This being a clinical lecture I shall endeavour to illustrate it as far as possible by references to cases which have come under my own observation.

[After describing the varieties of hernia due to imperfect closure of the vaginal process of peritoneum Mr. Eve passed on to the consideration of interstitial hernia.]

Three varieties are described:—

1. *Interstitial hernia: pro-peritoneal.*—From the original sac a secondary or additional sac protrudes between the peritoneum and the fascia transversalis either inwards towards the pubes or outwards towards the anterior superior spine. To this the name of pro-peritoneal hernia is given. The original hernia more often descends into the scrotum and the testicle is often retained. The existence of the secondary sac cannot usually be recognised during life.

2. *Intra-parietal.*—The second variety termed intra-parietal is much more common. In it an additional sac passes between the external and internal oblique muscles. It forms an oval swelling extending upwards and outwards parallel to Poupart's ligament. The testicle is stated to be usually undescended and the original sac does not as a rule enter the scrotum. In operating for hernia I have met with two cases which appeared to me to be examples of the intra-parietal form.

CASE 1.—A man, aged twenty-two years, was admitted to the London Hospital with an oval swelling above and parallel to Poupart's ligament on the right side. The testicle lay just inside the external ring. On dividing the aponeurosis of the external oblique a large oval sac was exposed in part occupying the inguinal canal, but extending from the position of the internal ring upwards and outwards for some little distance between the oblique muscles. After opening the sac and reducing the hernia the internal ring was seen as an opening leading directly backwards from the posterior wall of the sac at the junction of its outer with its inner two-thirds. The sac contained a globular mass of the size of a cricket ball consisting of intestine matted together by old adhesions. The peritoneum near the neck of the sac was dissected up and ligatured flush with the internal ring and a radical cure after Bassini's method was performed.

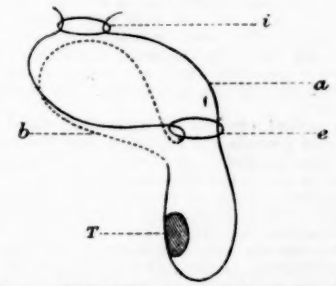
CASE 2.—A man, aged thirty-eight years, was admitted with an oval swelling in the groin extending upwards and outwards parallel to and overlapping Poupart's ligament and also downwards into the scrotum. In the course of the operation the swelling in the groin was found to be due to a considerable dilatation of the sac occupying the inguinal canal, but the sac did not project in an outward direction to any great extent between the layers of the abdominal muscles as it did in the first case. (See Fig. 1, *a*.) The testicle occupied the normal position.

3. *Interstitial hernia, superficial variety.*—The above case is also interesting because it illustrates the third variety of interstitial hernia in which an additional sac extends under the skin and fascia and superficial to the aponeurosis of the external oblique. The second sac was of considerable size. It projected from the original one near the external ring and passed upwards and outwards. In the diagram (Fig. 1) the continuous lines represent the original sac and the dotted lines (*b*) the additional sac between the skin and the external oblique.

In performing the operation of radical cure in a case of congenital hernia in a man on the right side I encountered a curious horn-like process of peritoneum which extended from the sac at the upper part of the scrotum in a direction upwards and outwards. The condition is shown in Fig. 2, taken from a sketch kindly made by one of my dressers during the operation. Both of these cases were examples of congenital hernia.

The condition met with in the two cases of intra-parietal hernia above described suggests that it is produced by an extreme dilatation of that portion of the vaginal process of peritoneum lying within the inguinal canal. The sac is at first confined to the canal but ultimately makes its way between the layers of muscle. Slighter grades are frequently met with when the testis is retained in the canal. This dilatation is probably due to some obstruction to the progress of the hernia downwards, probably a narrow

FIG. 1.



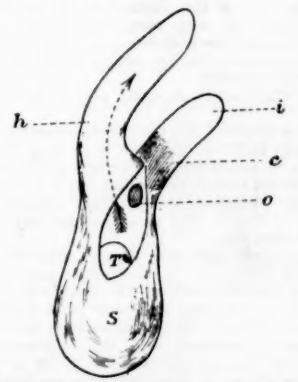
Second and third varieties of interstitial hernia. *a*, Intra-parietal sac. *b*, Superficial sac. *e*, External ring. *i*, Internal ring. *T*, Testicle.

external ring. On the other hand, it is difficult to understand how the diverticulum lying between the skin and the external oblique in the third variety is produced unless one supposes that a fasciculus of the gubernaculum had extended towards the anterior superior spine and had pulled a portion of the vaginal process after it. Such a band does extend into the perineum and sometimes causes displacement of the testicle on to that structure.

Direct hernia.—These cases are more often talked about than seen. As opportunities of dissection rarely occur I give you details of a case in which I performed the operation of radical cure.

CASE 3.—The patient was a man, aged fifty-two years. An oval swelling extended above and parallel to Poupart's ligament on the left side and the hernia did not pass into the scrotum. On introducing the finger through the external ring the internal opening was found to be directly behind it, and the epigastric artery could not be felt on the

FIG. 2.



Third variety of interstitial hernia. *i*, Internal ring. *c*, Inguinal canal. *S*, Scrotal sac. *o*, Narrow opening of funicular into scrotal portion of sac. *h*, Superficial additional sac or process. *T*, Testicle.

inner side. After division of the skin the external ring was found to be of natural size, but that portion of the aponeurosis of the external oblique overlying the swelling was much stretched. This was divided, exposing the sac which was entirely covered by the much expanded conjoined tendon. The spermatic cord and the epigastric artery were pushed outwards. After opening the sac its neck was secured by an interlocking ligature and the weak point in the

abdominal wall was closed by uniting the edge of the rectus and its sheath by means of three kangaroo tendon ligatures to Poupart's ligament.

[The usual and unusual contents of the sac were then detailed.]

Cæcal hernia.—I may illustrate this by two cases upon which I have recently operated in this hospital.

CASE 4.—An infant, aged nine weeks, was admitted with a very large scrotal hernia which had been strangulated twenty-four hours. The rupture existed at birth. On exposing the sac it was found to be occupied by the cæcum. Attached to the bottom of this was a gangrenous tag, evidently the vermiform appendix. A ligature was applied to its base and pure carbolic acid was painted on the gangrenous stump. The bowel was then returned and the peritoneal cavity closed by ligaturing the neck of the sac. The condition of the child would not permit of any further manipulation in the way of a radical cure. The patient made a good recovery.

This is a typical example of congenital cæcal hernia. There are good grounds for supposing that the cæcum is pulled down into the scrotum by the gubernaculum, of which the upper end is lost on the peritoneum of the iliac fossa.

CASE 5.—Shortly before the preceding case I operated on an elderly man who was admitted with a very large irreducible right scrotal hernia. There were no symptoms of strangulation, but the skin of the scrotum was red, hot, tense, and œdematous. I operated at once and found within a scrotal sac an ovoid mass of the size of a cricket-ball composed apparently entirely of matted and thickened omentum. This was incised and a cavity was reached containing fœtid pus. The cavity was enlarged by tearing, but still no intestine was visible. Another incision was made on the posterior surface and bowel was reached. But its walls were so closely incorporated with the omentum that a small incision was made into it before it could be recognised. After opening the abdomen by dividing the external oblique and neck of the sac and pulling down more intestine the contents of the hernia were finally unravelled. They were found to consist of the cæcum closely surrounded with omentum; and at the free end of the cæcum was an abscess cavity which had burst by one opening into the lower end of the ileum and by another into the cæcum itself. The vermiform appendix was not visible. It had probably become gangrenous and had been the source of the trouble. I was in some difficulty to know what was best to be done. The sloughy omentum could not be separated from the cæcum. It was clearly impossible to return the septic mass into the abdomen and it appeared also inadvisable to leave it in the scrotum. The small incision could readily have been united, but the bowel was also perforated beyond repair in two places. I determined, therefore, to excise the cæcum and unite the end of the ileum laterally by means of a Murphy's button to the ascending colon. This was accordingly done and the abdomen was closed. The patient developed acute bronchitis, apparently as the result of ether inhalation, and soon died.

In both of these cases of cæcal hernia there was a complete sac.

I have twice observed the vermiform appendix in hernial sacs. In one instance the tip was gangrenous. The appendix was therefore removed with a good result.

Ovarian hernia.—The congenital variety is much the commoner and is observed in infants associated with a patent canal of Nuck. The usual features may be gathered from the following case.

CASE 6.—A child, aged three months, was brought to me at the Evelina Hospital. At the upper part of the left labium was a rounded swelling with a nodule attached to it feeling like an epididymis and perhaps a portion of the Fallopian tube. There was no impulse on coughing. The swelling could be reduced into the inguinal canal, but descended again. It was observed soon after birth.

This case conforms to the usual type in that the hernia was on the left side and the ovary occupied a position just external to the ring. It appears to me probable that some of the cases diagnosed as ovarian hernia are really instances of cysts in connexion with the peritoneal lining of the canal of Nuck. I have met with two or three instances of this in adults. A child was admitted under my care at the Evelina Hospital with a rounded swelling in the inguinal canal supposed to be an ovary. At the operation by one of my colleagues the swelling proved to be a spherical and very tense cyst.

Causes of hernia.—[The chief predisposing causes, such as sex, age, heredity, and occupation, were mentioned and the importance of defects of closure of the vaginal process was dwelt upon. Mr. Eve then proceeded:—]

I have frequently observed in operations for radical cure in adults that the conjoined tendon is unduly narrowed, very thin, or the muscles attached to it ill-developed. Félizet has described in infants imperfect development of one or both of the pillars of the external ring. The fact should not be lost sight of that the immediate cause of hernia is in a large proportion of cases an increase of the intra-abdominal tension, either persistent or intermittent. This is especially obvious in the hernia of infants. Defective closure of the vaginal process may be present at birth, but a hernia often does not develop because the determining factor is absent. This is supplied in a large proportion of cases by distension of the abdomen with tympanitis due to chronic gastro-intestinal catarrh, often associated with rickets; or there may be phimosis with adherent prepuce, vesical calculus, ascarides, prolapsus ani, causing straining during micturition or defecation. It is often noted that the hernia was first observed during an attack of whooping-cough. Ascites is also an important determining cause.

Three times I have operated on herniæ in young children and found tubercles in the wall of the sac. Two were cases of inguinal hernia in which peritoneal tuberculosis was not suspected; the third was an umbilical hernia in which the ascites still persisted and a radical cure was performed in the course of the operation of laparotomy.

The same fact is apparent in hernia of adults. In young adult males *congenital* hernia develops after violent muscular effort or in those engaged in laborious occupation. Hernia is often observed in multipara and its subjects in middle life not infrequently possess an unusual amount of abdominal fat. Any causes leading to violent expiratory efforts or giving rise to persistent increase of intra-abdominal pressure, such as intestinal distension, pregnancy, and excessive fat, may determine the formation of a hernia, provided that the condition of one of the hernial apertures is favourable to its production.

Diagnoses of hernia.—It is not my intention to recapitulate the ordinary symptoms of hernia nor to mention the more common conditions from which inguinal hernia must be distinguished. I propose to briefly relate some cases in young children in which difficulty in diagnosis was experienced. Some of these difficulties are apt to arise when the testicle is undescended. A strangulated hernia may be mistaken for an inflamed undescended testicle. This is illustrated by the following case.

CASE 7.—One night I was called to the hospital and saw for the first time a boy, aged three years. There was a swelling, without impulse, and dull to percussion, in the right inguinal canal. The testicle was not in the scrotum and evidently lay in the canal. Four days previously the parents noticed the swelling; after that the child passed one motion. Subsequently to this he vomited occasionally but always during fits of coughing, and as he was suffering from whooping-cough the vomiting was ascribed to this cause. The child seemed bright and well in himself and took nourishment readily until the night on which I was summoned. During the whole time he had been watched by an experienced observer who concluded from the combination of symptoms that the condition was due to inflammation of the right testicle. I operated and found a gangrenous knuckle of bowel lying with the testicle in the inguinal canal.

Torsion of testicle.—This is nearly always associated with retention of the testicle in the inguinal canal and may give rise to symptoms closely resembling an incarcerated or irreducible hernia. The very next case to which I was called after that above related was a good example of this condition.

CASE 8.—A boy, aged three and a half years, was admitted to the London Hospital in January, 1894, with an irreducible tumour without impulse in the right inguinal canal, the testicle being undescended. The skin over it was red and tender, but there were no symptoms of strangulation. In view of what had happened in the previous case and thinking that the swelling might be either an inflamed testicle or possibly an incarcerated hernia I operated at once. The vaginal process within the inguinal canal was considerably dilated and contained only the testicle which hung quite free, attached only by a narrow pedicle formed by the cord. This was twisted on itself by one turn and the testicle was black and gangrenous but not decomposed. The

condition of the testicle reminded one of a grape hanging by its stalk.

CASE 9.—A boy, aged eight months, was admitted to the Evelina Hospital with a tender swelling projecting just beyond the external abdominal ring. This was at first thought to be a strangulated hernia. As the symptoms were not acute I was not sent for at once. No further symptoms developed and the swelling subsided gradually. When I saw the child a week after admission it was evident that the tumour was an undescended testicle and torsion was diagosed. In the operation the same condition was found as in the previous case. The organ was dark in colour. On cutting into it no blood escaped and its substance was marked by dark striæ of effused blood. Evidently the circulation had not at once been cut off.

In a third case which I saw in the out-patient room of the London Hospital the progress of this accident was watched, the parents refusing to allow the child to come into the hospital.

CASE 10.—On Nov. 19th I saw a boy, aged seven years, with a softish, very tender swelling, apparently of the size of a walnut, in the left inguinal canal. There was no impulse and no vomiting or constipation. Torsion of the testicle was diagnosed. When I saw him again on Dec. 10th the swelling had subsided and nothing remained but the wasted body of the testicle.

In cases of retained testicle I have noted that the band containing the cord and attaching the organ to the wall of the sac is often narrow and the sac itself within the inguinal canal is not infrequently bulging and voluminous. The conditions are therefore very favourable to the occurrence of torsion.

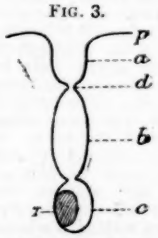
DIAGNOSIS FROM HYDROCELE OF THE CORD.

One of the chief difficulties of diagnosis in infants and young children consists in the differentiation between hernia, irreducible or otherwise, and hydrocele of the cord when the latter extends up to the internal ring. If the hydrocele of the cord be congenital (i.e., communicates with the peritoneal cavity) the manner in which the fluid slowly flows back under pressure as distinguished from the slipping back of a hernia serves to settle the diagnosis. But the congenital variety of hydrocele of the cord is rare. Usually the fingers can be inserted above a hydrocele, the upper part of the cord being felt free; and where this sign is wanting it will be found that the hydrocele is pulled down by traction upon the testicle, whereas a hernia is uninfluenced. It may be remembered that an enterocele in the young is nearly as translucent as a hydrocele. Again, in cases of strangulated enterocele resonance is sometimes absent owing to filling of the lumen of the bowel with sanious serum the result of exudation and migration of red corpuscles. This is due to pressure on the veins of the mesentery at the neck of the sac.

In reference to the diagnosis of hydrocele from hernia I will illustrate by means of diagrams some curious and unusual conditions met with in the course of herniotomy or in exploratory operations. Some of them may be considered unrecognisable before dissection.

CASE 11.—A boy, aged five months, was admitted to the

FIG. 3.



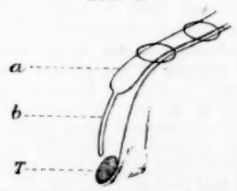
Hernia and hydrocele of cord. *a*, Sac of hernia. *b*, Hydrocele of cord. *c*, Hydrocele of tunica vaginalis. *p*, Peritoneum. *T*, Testicle. *d*, Constriction normally occurring at internal ring.

Evelina Hospital with a large fluctuating translucent swelling extending along the inguinal canal to the bottom of the scrotum. The testicle could be felt at its lowest part. There was distinct impulse on coughing, but the swelling was irreducible. The condition found is illustrated in Fig. 3. At *a* is a small hernia sac which occupied the inguinal canal. It communicated by a very narrow orifice with a hydrocele of the cord *b*, and below this was another constriction separating it from a hydrocele of the tunica vaginalis *c*. In this case the constriction of the vaginal process *d* normally occurring at the internal ring appears to have been pressed down the canal by a hernial protrusion. The orifice *d* was too narrow to allow of the fluid being returned by pressure into the sac.

CASE 12.—In another boy, aged seven years, I also found a small, incomplete funicular hernia above a closed hydrocele of the cord. The swelling was of course irreducible, but there was an impulse on coughing.

Fig. 4 shows a condition somewhat similar, met with in

FIG. 4.

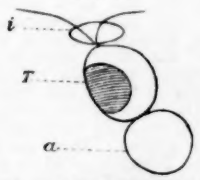


Hernia and hydrocele of cord. *a*, Sac of hernia. *b*, Hydrocele. *T*, Testicle.

the course of an operation for radical cure in an adult. At *a* is a hernia sac which occupied the inguinal canal and slightly protruded through the external ring. Below it a narrow prolongation of the vaginal process extends to the testicle. This process contained only fluid. The result of this condition was that the fluid could be expressed from the swelling in the cord in a manner characteristic of congenital hydrocele, although there were in addition the ordinary signs of hernia.

CASE 13.—Another child, a boy, was admitted to the Evelina Hospital with an elongated swelling in the right inguinal canal and upper part of the scrotum. It was irreducible, but there was an impulse on coughing and the testicle appeared to occupy the upper part of the swelling—viz., within the canal. The diagram (Fig. 5) shows the

FIG. 5.



Cyst below hydrocele of tunica vaginalis. *a*, Cyst. *i*, Internal ring. *T*, Testicle.

condition found on dissection. At the lower part of the swelling was a closed cyst *a* and above it was the testicle T, its tunica vaginalis distended with fluid.

I also removed a precisely similar cyst which was attached to the lower part of the tunica vaginalis of a completely descended testicle in a lad. These cysts appear to have originated in the following manner. It is well known that a diverticulum of the peritoneum precedes the descent of the testicle. Supposing that the testis did not descend to the bottom of this diverticulum, then the constriction cutting off the lower part of the vaginal process (i.e., that which normally forms the tunica vaginalis) from the upper or funicular part might form below the testicle a cyst such as was met with in these two cases.

IPSWICH CLINICAL SOCIETY.—At a meeting held on Jan. 12th Mr. S. O. Eades was elected President for the year and Dr. W. W. Sinclair was re-elected honorary secretary. Mr. Hossack showed a case in which he had successfully removed the Right Half of the Tongue together with the Sub-maxillary Gland for Epithelioma by a Modified Whitehead Operation. Mr. Branford Edwards showed a case of Tuberculous Disease of the Kidney. Dr. Brown and Dr. Vincent made remarks. Dr. Vincent and Mr. J. R. Staddon showed some Old Curious Surgical Instruments. Mr. C. K. Moseley brought up the question of the want of provision made in the town for the reception and treatment of cases of diphtheria requiring tracheotomy and it was decided to discuss the subject at the February meeting.

TRANSPERITONEAL LIGATURE OF THE ILIAC ARTERIES.[1]

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THIS paper is really an account of two cases of ligature of the iliac vessels—(1) of the internal iliac for pulsating tumour of the buttock; and (2) ligature of the common iliac for hæmorrhage from a pelvic abscess. In both these cases any method of securing the vessels without opening the abdominal cavity would hardly have been adopted by any surgeon of the present time. The advantages of the direct method of ligature seem to me to be so obvious that it is not necessary to discuss them. Connected with these cases are many points of obscurity in diagnosis and of general interest which seem far more worthy of discussion than the particular method of reaching the vessels. I may say in brief that for ligature of the common iliac, internal iliac, and perhaps with rare exceptions of the external iliac, the transperitoneal operation is the one I would choose.

CASE 1.—A man, aged forty-one years, was sent to me in January, 1894, by Mr. Mennell of Shepherd's Bush with a pulsating swelling of the right buttock which had been first noticed in October, 1893. Five years before the patient had a fall on to his sacrum and six months later he had sciatica in his right leg which lasted some weeks. After this he remained well until December, 1892, when he began to have pain in the right leg, and in July, 1893, he complained of numbness as well as pain and consulted a medical man who treated him with iodide of potassium. There was a doubtful history of syphilis. On examination, he was found to be an anxious-looking man complaining of swelling in the right buttock with pain down the leg and a feeling of numbness. During the last month he had been troubled with irritability of the bladder and pain extending from the anus to the penis. A marked swelling was seen in the right gluteal region which pulsated visibly. The most prominent portion of the swelling and the greatest pulsation was at a point just external to the right sacro-iliac synchondrosis. The swelling extended from the middle of the sacrum to a point 5 in. external to this and from the crest of the ileum to a point 5½ in. down; it was firmly fixed to the deep structures. The skin was freely moveable over it and showed no discolouration or glazing. There was no apparent glandular enlargement. Pulsation could be greatly diminished by pressure along the line of the iliac crest. The pulsation was somewhat expansile in character and a loud bruit was present. Nothing abnormal was detected in the vascular system beyond a slight aortic systolic murmur. Examination of the chest showed signs of old bronchitis and emphysema of the lungs. My first impression was that the case was one of pulsating sarcoma of the pelvis, and I sent the patient into hospital for observation. During the next fortnight he complained of great pain and the incontinence of urine and fæces became very marked. There was considerable difference of opinion amongst my colleagues as to the nature of the swelling and by several it was thought to be aneurysmal in character. Even supposing my view that it was a sarcoma was correct, treatment by ligature of the internal iliac might do good and relieve some of the pain. On Feb. 3rd an incision was made in the middle line of the abdomen, the intestines were held aside with flat sponges and broad retractors and the posterior peritoneum was divided also in the middle line and reflected to the right, carrying the ureter with it. Search was then made for the internal iliac artery—but without success. To gain more room a transverse incision was made through the greater part of the right rectus muscle. A vessel was exposed below the pelvic brim, which was clearly not the internal iliac but probably the gluteal. Having failed, as I thought, to find the internal iliac I exposed and ligatured what I believed to be the common iliac—two goldbeater-skin ligatures were employed—but after drawing these ligatures tight it was found that pulsation still continued in the femoral vessel. Further examination showed that the external iliac artery was lying just outside the vessel ligatured. The common iliac was very short and the internal was correspondingly long and lying in almost the whole of its course above the brim of the pelvis, parallel with the external vessel. By ligature of the internal vessel all pulsation in the tumour was arrested. The peritoneum was replaced and secured in the middle line by a few fine silk sutures. The relief afforded by the operation was at first very marked; the pain diminished and the swelling besides losing its pulsation seemed to get a little smaller. I was fully convinced that the aneurysmal view was the correct one. In about a week some pulsation was again observed but it never returned to the same degree as before operation. On the sixtieth day whilst the patient was turning himself in bed spontaneous fracture of the right femur occurred just below the great trochanter and it became obvious that the primary tumour of the buttock must be a sarcoma. The fracture was treated by a long outside splint and extension. He remained in a bed-ridden and distressing condition but without any evidence of tumour at the seat of fracture and no increase in the gluteal swelling. The liver showed some increase in size and just outside the position of the gall-bladder a hard nodule could be felt. On the 158th day after ligature the limb was removed to give the man a better chance of leaving his bed. The amputation was just outside the capsule of the joint. No evidence of growth was discovered at the seat of the ununited fracture at the time of amputation. Microscopical examination by Mr. Shattock showed a round-celled sarcoma in the medullary canal. Great improvement in the patient's general condition followed and he was soon able to get about on crutches and he left for his home in the country 232 days after admission. He came up to see me some six months later in greatly improved condition. The gluteal swelling was larger and still pulsated slightly; he had still loss of control over the sphincters. The nodule in the liver was larger and somewhat tender on pressure. He was, however, able to get about and to attend a little to his business and was much less troubled with neuralgic pains. He had an attack of congestion of the lungs a year later, from which he died. Unfortunately a post-mortem examination could not be obtained.

When the patient was first under observation the main points in favour of the tumour being a sarcoma were that the pulsation was much more intense in one particular area and that comparatively superficial pressure along the crest of the ileum considerably diminished the pulsation. The swelling was more widely diffused than one would expect with an aneurysm of a vessel like the gluteal at its origin. On the other hand, there was no evidence of bone expansion, as so often occurs in pulsating tumours of bone, and the point of greatest intensity of pulsation corresponded fairly well with the main trunk of the gluteal. The treatment by ligature was followed by decided improvement and I believe delayed the growth considerably in its development and certainly encourages one to adopt this course in cases of tumour unsuitable for radical removal. In ligature of the internal iliac artery it is desirable to make out clearly the common iliac and its bifurcation before hunting for the internal iliac in the pelvis. The abnormality met with in this case is, I believe, not very uncommon, and much time would have been saved if it had been recognised at the first stage of the operation. Certainly the transverse section of the rectus muscle might have been avoided. The behaviour of the spontaneous fracture was remarkable. I have several times seen union occur in spontaneous fracture from carcinoma, but never when it is the result of sarcomatous invasion of the bone. I did not therefore expect to get union when I treated the fracture by splints, but I expected to find evidence of growth around the broken ends and was much surprised when at the amputation no such appearance presented itself. Mr. Shattock, however, on making a microscopical examination of the medullary tissue at the seat of fracture reported that it showed a round- or polyhedral-celled sarcoma with a large number of blood-vessels, the latter giving a nævoid condition to the growth. The tumour might therefore be termed a cavernous or nævoid sarcoma. It is interesting to note that although the patient lived for nearly eighteen months after the amputation and that this was done so close to the growth yet no return took place in the stump.

CASE 2. *Hæmorrhage from pelvic abscess treated successfully by ligature of the common iliac artery.*—A man,

[1] A paper read before the Medical Society of London on Dec. 12th, 1898.

aged twenty-four years, was brought to see me in October, 1894, by Mr. Kitching of Cobham with the following complicated history. He was perfectly well till the age of fourteen years; he had then whilst at school in Scotland in February, 1886, a boil on his neck attended with fever and some pleurisy of the right side. He was two months in bed and towards the end of this time he had an abscess in the right lumbar region which was incised and which discharged for a few days. Some contraction of the left leg was then found and extension was ordered. He returned home to Liverpool and was seen by Mr. Mitchell Banks who treated him with continued rest for an inflamed psoas. Mr. Banks informs me that he could find no evidence at that time of any mischief in the vertebræ or pelvis. After some months' continued rest in a leather splint he was taken for a sea trip and he got apparently quite well. He returned to school after an absence of eight months and in ten days the leg was again giving trouble—viz., soreness and pain—and he had to return home and remained away from October, 1886, to May, 1887. In August, 1887, his right shoulder became painful and an abscess discharged spontaneously in October at a point corresponding to the insertion of the deltoid. The arm was kept to the side for six weeks and the sinus healed and he remained perfectly well till October, 1888, when pain and swelling recurred in the shoulder and an incision had to be made, and the arm had to be kept quiet for eight weeks. In the following June an incision was again necessary. He left school in July, 1889, and, except for most obstinate constipation, he remained well till October, 1893. He was at Oxford from 1890 to 1893. In 1893 he went to America and on the voyage he had sciatica of the right leg, and during his stay of two months the condition of constipation greatly increased. In June, 1894, he was again troubled with pain down the right leg and in the loin and along the iliac crest, with increasing difficulty with the bowels and occasional feverish attacks with a rise of temperature. He was an only son; his parents were alive and very healthy. The patient was a very tall, strong-looking man and beyond a scar in the right loin and one in the right shoulder nothing surgical could be detected. I referred him to my colleague, Dr. H. P. Hawkins, and under treatment he made some improvement and was able to return to business in May, 1895. In July he suddenly developed another attack of pain in the legs and tenderness in the groin and a little thickening and resistance were to be felt at the outer part of the iliac crest. He afterwards went to Ireland and was very well for a month there. In October he again had pain down the leg with fever. In January, 1896, he went to India, returning home in April. He was in considerable discomfort during the whole trip, with great irregularity of the bowels and feverish attacks accompanied by pain about the right hip. At times he noticed some blood and mucus with the motions and thought that an abscess was discharging per rectum. He had much pain when straining at stool and was unable to walk straight on account of discomfort about the groin. In July, 1896, he went into a nursing home in London and the symptoms seemed to point to the appendix as the seat of trouble. He had a tender, deep swelling which felt very hard in the iliac region, below and outside the usual portion of the cæcum, with a temperature varying between 99° and 101° F. The evacuations were carefully watched and with the decline of the temperature, the relief of the symptoms and the diminution of the swelling there was a definite discharge of pus in the stools. It was now clear that he had a deep-seated abscess which periodically discharged into the bowel and both Dr. Hawkins and I were convinced that the appendix was the cause of the trouble. So definite a discharge of pus had taken place and with such a marked improvement that operation was decided against. He returned home and was carefully watched by Mr. Kitching who sent him again to the home in London on August 24th as he then had some hardness and redness of the skin over Poupart's ligament. An incision was made and a small quantity of thick pus was evacuated (about 2 or 3 drachms). A long sinus was traced from the incision just outside the femoral vessels under Poupart's ligament into the pelvis, but no bone could be felt by a bullet probe. It was now clear that the abscess was independent of the appendix and most probably was due to some obscure bone trouble in the lumbo-sacral region. A drainage-tube was inserted. The after-progress was satisfactory; there was very little discharge in the dressings and the temperature became normal. He left for his home in three weeks' time. On Oct. 23rd I saw him again with Mr. Kitching as he had had a temperature for several days ranging from 101° to 103° and again a good deal of tenderness about the sinus and in the right iliac region. I dilated the sinus and introduced a larger tube; the discharge was of a thin unhealthy character. Warm boric fomentations were ordered. The temperature fell to normal, but on Oct. 27th—i.e., two months after the operation—he suddenly had severe hæmorrhage from the sinus which was stopped by pressure and a tight compress. On arrival I found him blanched and with a rapid pulse and constitutional signs of loss of blood. The mattress was soaked with blood. The compress was removed and blood began to come freely from the sinus, and it evidently came from the deeper parts of the abscess cavity; compression of the common femoral or the epigastric or circumflex iliac with the finger in the wound did not arrest it. A careful plugging of the cavity with iodoform gauze was done under chloroform. The following day the patient's temperature was 104·4°, but it gradually came down and all went well for a week, the gauze plug being changed on the fourth day. On Nov. 5th I was again sent for as the hæmorrhage had recurred and the patient was in a very exhausted and critical condition. Mr. Stabb saw the patient with me and I was prepared to ligature the internal iliac artery. The position of affairs was difficult for the patient's father who was just returning from America was expected in a few days' time. The wound was carefully replugged and it was decided to remove him in an ambulance by road (a distance of twenty miles) to the St. Thomas's Home for Paying Patients. Mr. Stabb and Mr. Kitching kindly travelled with him. During the next few days he improved in condition. On the morning of Nov. 15th severe hæmorrhage again took place which was stopped by the resident medical officer of the home with firm pressure over the gauze plug. On arriving I repacked rapidly and determined to operate without further delay. The father had in the meantime returned from America and both he and the patient were wishful for radical measures to be adopted.

The operation took place on Nov. 15th at 2 P.M. The anæsthetic was given by Mr. Tyrrell and I had the advantage of the able assistance of Mr. Stabb, Mr. Abbott, Mr. Edmunds, and Mr. Kitching. The condition of collapse was such that we expected to have to infuse during the operation. A free central incision was made from just below the umbilicus to the pubes. The colon was examined and it was found that the appendix was normal, but that the large bowel was very elongated and the sigmoid flexure had a very large omega-shaped curve, thus accounting for the great trouble for so long a time with the evacuation of the bowels. An incision was made in the peritoneum over the medial line of the sacrum, and the internal iliac artery was exposed without difficulty. The gauze plug could be felt extending behind the peritoneum to within an inch of the main trunk. The vessel was found to be very fixed by chronic inflammatory products and all attempts to pass an aneurysm needle failed. I was particularly anxious to ligature the internal vessel, since owing to his anæmic condition I was fearful of the circulation in the limb if the common iliac were ligatured. An attempt was therefore made to pass the aneurysm-needle behind the artery and vein and so to ligature *en masse*. A considerable gush of blood took place from a wound of the vein which was arrested by pressure on the common iliac. The attempt was therefore abandoned and the common iliac was exposed and a stout floss silk ligature passed and the vessel tied by a surgeon's knot. We found that the circulation was not controlled, the ligature being too thick for the hitches to be efficiently tightened. The vessel was then tied in two places with a thinner floss silk ligature with an interval of ½ in. between them. The original thick ligature was then removed. The circulation was now effectively controlled. The peritoneum was adjusted but not sutured and the operation was finished as quickly as possible. The patient took the anæsthetic remarkably well and it was not found necessary to infuse. The abdominal wound healed without trouble and the warmth of the limb was well maintained, though pulsation in the tibials was not re-established for some weeks. A remarkable change took place in the chronic abscess lining—it necrosed and a very offensive discharge of a free character continued for several weeks. Rapid repair then set in and in six weeks the sinus was soundly healed and has never given any trouble since. During many of the short febrile attacks

which the patient had had between 1894 and 1896 he often had pain and considerable tenderness in the right shoulder and several times I expected suppuration to occur there, but these symptoms always passed off with the improvement in other conditions. He remained in St. Thomas's Home for seven or eight weeks and left for his own home greatly improved in condition. The right leg was diminished in size, but the collateral circulation was well established. He shortly afterwards changed his residence for a more bracing atmosphere and has since been under the care of Dr. A. Lyndon. The patient wrote to me on Nov. 15th, 1897, being the anniversary of the last operation, and expressed himself as feeling extremely well and putting on flesh at such a rate that all his old clothes had to be let out; he was moving about in the house freely without crutches, but using them as advised when out of doors. The bowels were still a difficulty and the use of enemas was frequently necessary. Occasionally he had spells of soreness above the hip, but much fewer and milder than formerly. His general health was perfect. In December, 1897, I was asked by Dr. Lyndon to see him for a swelling at the lowest part of the abdominal cicatrix. The swelling was reducible and had some impulse and it was difficult to say whether it was a hernia or an abscess presenting through the cicatrix. The swelling was a little tender and there was a sense of fluctuation. It was covered with gauze and wool and a few days later burst and a large quantity of laudable pus escaped into the dressings. Careful examination of the sinus showed that it led deeply into the pelvis but without apparent connexion with the former abscess cavity, the cicatrix of the old sinus remaining perfectly sound and free from tenderness. He was kept at absolute rest by Dr. Lyndon and in March, 1898, the floss silk ligature presented itself in the discharges. After this the sinus slowly closed and has been for some months soundly healed. I last saw the patient in London and ordered him to wear a truss for a weakness of the lower part of the cicatrix. He was in very good health; he weighed 14 st. and was apparently at last free from any inflammatory condition.

The points for consideration in this case seem to be as follows. 1. The original infection. I believe it to have been tuberculous. We have pleurisy as an early symptom, and this was followed by several suppurative troubles, most probably connected with superficial caries of the humerus just outside the joint. The affection of the left psoas which was so obstinate can be best explained by similar bone trouble low down in the vertebra. We have then a long period of intermission and again chronic inflammatory trouble in the pelvis affecting the right side. It is not likely that any inflammatory affection other than a tuberculous one would have remained latent so long. 2. The diagnosis between inflammatory trouble due to chronic appendicitis and that due to bone disease is sometimes very difficult. Looking back on the case I think that more attention ought to have been paid to the pains down the leg which appear so often in the history but were never at all prominent whilst the patient was under observation. One prominent feature in the case was the constant association of discomfort and slight rise of temperature with constipation and the relief afforded by laxatives and enemas. 3. Hæmorrhage from chronic abscess ulcerating into vessels is usually significant of bone trouble and occurs perhaps most frequently in popliteal abscess due to caries of the back portion of the femur. The recurrent and sudden outbursts of bleeding in this case pointed to a communication with a large vessel and was of quite a different character from the bleeding sometimes met with from unusual vascularity of the granulations. I do not know of any case where ligature of the internal iliac or the common iliac has been necessary, but am confident that this patient's life could have been saved in no other way. 4. The behaviour of the ligature in this case was unusual. After lying apparently quiescent for a year it set up suppuration and was eliminated. For a large artery I believe the stay knot suggested by Mr. Ballance and Mr. Edmunds in their work on the Ligature of Arteries is the best. I have used it several times and cannot now explain why I did not employ it in this instance. My attention was so occupied with the other circumstances of the case that I probably did not give this point full consideration at the time. In tying the artery, however, I endeavoured to stop the circulation with the least amount of constriction and I believe that I did not rupture the coats.

Harley-street, W.

THE TRUE FUNCTION OF THE THYMUS.

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THERE is hardly an organ in the body about whose functions in the embryo and at later periods so little is really established as the thymus. Since Kölliker[1] discovered its mode of origin in mammals from the epithelium of a gill-pouch and since he stated that the original epithelial cells gave rise to lymph-cells or leucocytes two views have been held concerning it. On the one hand, Stieda[2] and His[3] have maintained that the leucocytes which always form integral parts of the thymus soon after its first origin have migrated thither from the exterior, possibly from the mesoblast. In this conclusion they have been supported by the researches of Dohrn,[4] Gulland,[5] and Maurer,[6] and by almost every text-book of embryology and comparative anatomy published since 1879. On the other hand, Kölliker has stoutly maintained his original position and the results of his investigations have in recent years been emphatically confirmed by Prenant,[7] Oscar Schultze,[8] and myself.[9] According to the views of Stieda and His, Hassall's concentric corpuscles are supposed to arise from the original epithelial cells and the function of the thymus is still absolutely unknown. No serious attempt has ever been made to convert this hypothetical origin of the concentric corpuscles into fact by systematic investigation. On this view, then, nothing of the least practical use and value is at present known regarding the nature of the thymus. According to Kölliker the original epithelial cells of the thymus give rise to lymph cells or leucocytes. And although he made no attempt to explain Hassall's corpuscles it must be evident that, if his conclusion be correct, something of positive value is thereby established. As already stated, the three most recent students of the thymus have entirely accepted Kölliker's results. None the less in the latest English edition (1897) of Wiedersheim's "Comparative Anatomy" the author felt himself obliged to say: "The function of this organ, though doubtless a very important one, is not understood."

I have long suspected the function of the thymus to be a very important one but, in spite of repeated attacks on the problem, my researches had until last summer yielded little or nothing beyond a confirmation of Kölliker's brilliant discovery. Even now, when success has completely crowned the failures of past years, at a time when the developmental history and function of the thymus in one vertebrate animal (*Raia batis*, the smooth skate) can be demonstrated on numerous preparations with the utmost certainty and ease, the problem owes its solution in the first instance not to direct attack on the organ itself, but to the unravelling of another puzzle. While engaged on general developmental researches a little, but significant, fact forced itself into notice. This was that for a relatively long period of the development the blood contained only nucleated coloured corpuscles and no leucocytes whatsoever. It was recalled that this had originally been noted by Kölliker some years ago and that it had been commented upon by H. E. Ziegler who had ventured the conjecture—a very safe one—that the condition persisted until some lymphoid organ or other arose. The question was asked, "At what period of the development and from what source or sources do the white corpuscles of the blood or leucocytes arise?" It had previously been recognised that there was a particular epoch of the development, termed by me[10] the "critical period," at which the foundation of every organ of the body was present as such. It was obvious that, if the existence of a critical period had a groundwork of fact, the leucocytes of the blood, as forming integral parts of a vertebrate animal, ought to be present

[1] Entwicklungs-geschichte des Menschen und der höheren Thiere, 1879, pp. 875 to 880.
[2] Untersuchungen über die Entwickelung der Glandula, Thymus, &c., Leipsic, 1881.
[3] Anatomie Menschlicher Embryonen, 1880, p. 56.
[4] Mittheilungen aus der Zoologischen Station zu Neapel, 1884.
[5] Reports of the Royal College of Physicians of Edinburgh, 1891.
[6] Morphologisches Jahrbuch, Band xi., 1885.
[7] Développement du Thymus—La Cellule, Tome x., 1894.
[8] Grundriss der Entwicklungs-geschichte des Menschen, &c., 1897.
[9] The Development and Probable Function of the Thymus, Anatomischer Anzeiger, Band ix., 1894.
[10] Vide Certain Problems of Vertebrate Embryology, Jena, 1896, and The Span of Gestation and the Cause of Birth, Jena, 1897, both published by Gustav Fischer.

at the critical period, or, if not themselves evident as such, the foundation or foundations from which they arose ought to be in existence. In the fishes studied it was very easily made out that abundant leucocytes were present in the blood at and even before the critical period. Working to earlier stages from this point and from early stages where no leucocytes existed anywhere in the embryos the period was at length reached when leucocytes first entered the scene. When this point had been approximately fixed a dilemma was the first result. For the moment the observer had not the slightest idea whence they came. Kölliker's results on the thymus, proving that it produced leucocytes, were remembered, as was also my own confirmation of them.

The phase at which leucocytes appeared did not lend colour to the idea that the thymus could have much to do with the matter. For it was recalled that in such embryos the thymus elements (of which there are in the skate five on each side of the body) were then nothing more than small pieces of modified epithelium. Although the thymus was not *a priori* a very promising subject for new research there seemed to be none more likely. At the period when leucocytes first appeared the spleen had no existence, there was no rectal gland or cæcum, and, in fact, lymphoid structures of any and every sort were entirely wanting. As a working hypothesis it was suggested that the first leucocytes of the body were formed by and from the epithelial cells of the thymus. The subsequent investigation of a very extensive series of embryos of the skate fully confirmed this hypothesis and converted it into a fact capable of complete and convincing demonstration in this animal. My results at present relate only to one vertebrate animal and this a fish, *Raia batis*, the smooth skate. None the less, what seem to me to be convincing reasons can be given for extending these to all true vertebrata and to man himself. The plan of the organisation of a skate is practically the same as that of the organisation of man himself. No organ is found in man which has not in some form or other its counterpart in the skate, and the functions of the organs of a man are to all intents and purposes the same as those of like organs in the skate. With the single exception that Hassall's corpuscles have never yet been found in the skate, though not for want of the search for them, the place of origin, the mode of development, and the minute anatomy of the thymus of man essentially agree with those of the same organ in the skate. I have before me as I write sections through the thymus of a late and nearly ripe fœtal rabbit and of a young skate almost ready to leave the egg. In both the main feature of the thymus is the crowd of leucocytes filling the field of the microscope. An experienced embryologist or histologist could not distinguish the one from the other, unless he had previously studied both, knowing what they were. The sole difference is one of size of the leucocytes. Indeed, whether viewed from the standpoint of histology or from that of development there cannot exist the slightest doubt as to the identity of function and structure in the thymus of the skate and of man.

This is not the place in which to give a full and complete record of the research along with the necessary figures. It may suffice to state briefly the results without producing the whole of the evidence on which they are based. The evidences will be given in full in a special memoir, and I would here only ask permission to state that in a working experience of upwards of sixteen years in vertebrate embryology I am aware of no fact which can be so completely and convincingly demonstrated as this origin of the first leucocytes of the body from the cells of the thymus-epithelium. Numerous figures—upwards of forty—have already been carefully drawn, and even fifty times this number would not exhaust all the preparations at my disposal. Many of the figures have been drawn under a $\frac{1}{12}$ oil-immersion of Leitz, and but for the use of such a high lens as this some of the results could not have been obtained.

The thymus of the skate is certainly hypoblastic in origin, and the plate of epithelial cells (of one layer of cells) which gives rise to any one of the ten thymus elements of *Raia*, can be made out before any of the gill-pouches are open to the exterior. It then forms in each pouch a well-defined portion of the dorsal wall. After rupture of the pouch it is pushed somewhat upwards and outwards and ultimately comes to lie on the level of the notochord. Afterwards by increase among its cells the one-layered arrangement is converted into a formation of two or three cells deep. The mode in which the epithelial cells become converted into leucocytes can be readily observed under high magnifications in sections of embryos of 17 to 22 mm. Without describing the details at length it may be stated that the process is exactly comparable to that in which the original epithelial cells of the brain or spinal cord become converted into ganglion cells. Being now thoroughly familiar with the development of both ganglion-cells and leucocytes I have no hesitation in making this statement. As in the development of ganglion cells the original parent-cells of leucocytes are epithelial cells. To study the conversion of these into leucocytes one needs to examine the parent-epithelium of the thymus under very high lenses. For this purpose the lens made use of has been a $\frac{1}{12}$ oil-immersion of Leitz. The first change in such an epithelial cell appears to be one in its protoplasm or cytoplasm. This becomes somewhat more refractive and in favourable sections takes on a somewhat brownish tinge. At first no alteration can be noticed in the nucleus which is oval as in the other epithelial cells. Then the nucleus becomes rounded and gradually the whole cell acquires this shape. With this and the marked refractile nature of the protoplasm the cell has taken on the characters of a leucocyte. Another peculiarity, already recorded by M. Heidenhain regarding leucocytes, is that the nucleus comes to occupy an excentric position. Many of the earliest-formed leucocytes apparently remain, at any rate for a time, within the epithelium, while others of them proceed to wander out into the mesoblast and elsewhere. Those that remain seem to undergo division, for only in this way can the numerous cell nests of them and little groups of twos and fours be explained. Those which wander out may be caught in the act of emigration and there are several drawings of preparations showing leucocytes in the act of emerging singly from the epithelium. They are not wandering into the epithelium, for until some are formed within the latter there is no source in the body whence they could be derived. Neither do they enter it as epithelial or connective cells or as "mesenchyma," for there are no evidences whatever of this. In fine, in early stages all the evidence goes to prove the gradual conversion of the epithelial cells of the thymus-epithelium into leucocytes. Stieda asks in his work on the Thymus, &c., "How can adenoid tissue arise from an epithelium?" The difficulty of understanding this may have existed in 1881 when there were hardly any observations whatever concerning the origin of lymphoid cells. There is no longer any difficulty about the matter when many convincing preparations can be produced to show it. Where nature raises no obstacle in the way of carrying out a process it is not for man to invent one.

The fact is that in nature, as Kölliker stated in 1879 and as my preparations enable me to prove, adenoid tissue does arise from epithelial cells. In embryos of 22 mm. in length and smaller the production of leucocytes is not great. In a single section of one thymus element one may in such embryos count from six to a dozen cells which are either fully-formed leucocytes or are taking on leucocytic characters. Only rarely is the emigration of a single leucocyte observed, there are few in the mesoblast near the thymus and in the blood itself. In embryos of 25 mm. progress is being made. Leucocytes and leucocytic cells are far more numerous within the epithelium, from twenty to thirty being met with in a single transverse section. Their emigration is now a more conspicuous phenomenon. One may still meet with single leucocytes caught in the act of emigrating, but this has begun to give place to a slightly different process to be presently described. As Kölliker first stated, for a period of some duration the embryonic blood is destitute of leucocytes and this is true, of the embryonic blood of all vertebrates from fishes to man. My researches have revealed the fact that this absence of leucocytes obtains until the first ones are formed within the thymus-epithelium and from its epithelial cells.

As soon as leucocytes begin to be formed in the early history of the thymus some of these wandering cells, true to their hereditary instincts, begin to emigrate singly from the thymus, making their way into the mesoblast, and sooner or later, very soon to all appearances, many of them also get into the blood. The emigration of single leucocytes only goes on as long as their production is not great. When the thymus elements set to work in earnest to form leucocytes—i.e., in embryos of 28 mm. and upwards—they emerge from the thymus in crowds, thus causing larger or smaller "breaks" at various places on its contour. These "breaks"

are found in almost every section of every thymus element of every embryo between the sizes of 28 mm. and 42 mm. Taking only 10 such embryos from my collection, the actual number being really about 20, as there are 10 thymus elements, 5 on each side, in each embryo, and as the number of sections through each of these elements will be from 10 to 20, it is not an exaggeration to estimate that there are hundreds of sections all showing these breaks and the emigration of leucocytes from the thymus. In this way the whole body of the embryo, including its blood, soon becomes richly infiltrated with leucocytes. This happens before lymphoid structures are developed elsewhere within the body and demonstrably these first leucocytes of the blood and of the body have taken their origin in one or other of the ten thymus elements of *Raia*. A capsule of connective tissue and blood capillaries is formed very late (43 to 54 mm. embryos) and from this period the majority of the leucocytes produced by the thymus probably make their way directly into its capillaries. Hassall's concentric corpuscles have not been met with at any period in the thymus of *Raia*. It is, of course, quite possible that they may be found in old skates; but, as these animals possess no certificate of birth, the search for such an example might not be successful.

Before indicating the conclusions to be drawn from these results it is fitting that the services of my predecessors should receive proper notice. The claims of other workers on the thymus would be set forth at length with the necessary quotations from their works and in their own words in a more extended memoir. The history of the histogenesis of the thymus—and a sad one it is—begins with the researches of Kölliker published in 1879. In these Kölliker stated that the thymus of the rabbit arose from (the wall of) a gill-cleft and that its original epithelial cells became converted into leucocytes. This latter discovery is among the most brilliant ever made by the honoured Nestor who has occupied a pre-eminent position in the embryological and histological research of the past fifty years. But its fate has been the very reverse of that to which its importance in embryology, histology, physiology, pathology, and practical medicine fully entitled it. Against his results were placed the conjectures and assertions of Stieda and His, and although these never obtained a really satisfactory basis of support in the researches of the two anatomists just named or of others, although they were never really based on actual "finds" at all, they sufficed to dominate our ideas as to the nature of the thymus for nearly twenty years. According to them leucocytes wandered into the thymus from the mesoblast and the original epithelial cells of the thymus gave rise to Hassall's corpuscles.

Now, in the skate, as we have seen, Hassall's corpuscles have not yet been found and the original epithelial cells give rise to leucocytes, as is now abundantly proved for this and several other vertebrates, fishes and mammals, by the researches of Kölliker, Maurer (in part), Prenant, Oscar Schultze, and myself. Moreover, how can leucocytes wander into the thymus from the mesoblast or from any other part of the embryonic body at a period when there are none in existence elsewhere? How can this happen when the very first source of leucocytes in the body is the epithelium of the thymus itself? The formation of leucocytes is, therefore, as Kölliker first showed, a function of the thymus. But as my researches prove, one can now go on a good deal further, and state with the utmost confidence that it is the function of the thymus not merely to form leucocytes, but to be the parent source of all the leucocytes of the body.

In 1891 Gulland stated that the first leucocytes of the body arose in the mesoblast in the neighbourhood of the thymus. One cannot help wondering whether or not he put the further question to himself, "Whence do they come?" At any rate, he gave no correct answer to the query, and the first reply to it is contained in the present communication. It is Kölliker's great service to have shown that leucocytes arise in the thymus from its original epithelial cells; to Gulland's researches we owe the result that the first leucocytes are found in the mesoblast in the neighbourhood of the thymus; and, finally, it has fallen to my lot to show that the *first leucocytes arise in the thymus from its epithelial cells, and that thus it is the parent source of the leucocytes of the body*. The last link of the chain binding the whole together has now at length been forged, and that this is so may be shown in another way. Is there any other probable source of leucocytes in the vertebrate body? The answer to this question must now be a most decided negative, and this for the following reasons.

1. When the first leucocytes arise in the thymus-epithelium there are no leucocytes and no lymphoid structures of any sort in any other part of the body. The first or parent leucocytes by their wanderings quickly infiltrate the blood and most other parts of the body. From this it follows that if a lymphoid organ arises later elsewhere it will always be impossible to prove that it did not take its origin from some of the leucocytes or their progeny which originally came from the thymus. If a new outbreak of an infectious disease occur in a street at a time when in another part of the street the same illness has already manifested itself, the latter or its original source is considered sufficient to account for the fresh cases. The white races of America are descended from ancestors who emigrated from Europe and no one would dream of enunciating the idea that the white inhabitants of, say, a western prairie village had arisen *de novo in loco*.

2. No other lymphoid organ is known which in its developmental history resembles the thymus. Attempts have been made by Retterer and others to prove such a mode of origin of lymphoid structures in the case of the tonsils, parts of the alimentary canal, and the bursa Fabricii of birds, but these have all one after the other been disproved by an able embryologist and histologist, Professor Philip Stöhr.

3. The thymus alone is sufficient to account for all the leucocytes of the body, and since Schaffer demonstrated its existence in Marsipobranchiate fishes—a discovery which I can confirm—we now know it to be an organ characteristic of all true vertebrate animals.

4. Except in the case of organs which are paired or form parts of a metameric segmentation, we do not seek for two organs with the same function in any vertebrate animal. The thymus is a paired, metamerically repeated organ if the gill-region be metameric, but its development is confined to that region in all known cases.

In the trunk-region of no vertebrate is the homologue of any organ occurring in its branchial region encountered. It must, therefore, be held—and in my humble opinion the contrary is impossible of proof—that the thymus is the parent-source of all the lymphoid structures of the body. This conclusion throws light upon one of the teachings of embryologists, histologists, and pathologists—that the thymus is an example of an organ which after assuming function in early life atrophies at a later period. This is only certainly known to happen in mammals, and from it the inference is drawn that in later life the organ ceases to exist. It no more ceases to exist than would the Anglo-Saxon race disappear if the British Isles sank beneath the waves. The simile is a real one, for just as the Anglo-Saxon stock has made its way from its original home into all parts of the world and has there set up colonies for itself and for its increase, so the original leucocytes, starting from their birthplace and home in the thymus, have penetrated into almost every part of the body and have there created new centres for growth, for increase, and for useful work for themselves and for the body.

Edinburgh.

DO WE AGE MORE SLOWLY THAN OUR FORBEARS DID?

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"Ah me! what wonder-working occult science
Can from the ashes of our hearts once more
The rose of youth restore?"
—*Longfellow.*

THE rate at which we grow old varies to some extent with the individual. The progressive structural defects which eventually constitute the decrepitude of old age are for the most part the results of casual or preventable incidents during a man's previous life. Zymotic disease plays an important part among the agents which can initiate those local changes so conducive to early senility and death. The statistics published by the late Sir George M. Humphry[1] shortly before his death show as a rule that they live longest who have escaped the bodily infirmities commonly attributed to

[1] "Old Age," the Results of Information received respecting nearly Nine Hundred Persons who had Attained the Age of Eighty years, including Seventy-four Centenarians. London: Macmillan and Bowes, 1889.

old age. Joint-stiffness is one of these ailments.[2] Owing to their anatomical and functional peculiarities the joints are specially liable to injury from blows or as the result of bacteric infection. Yet of the nonagenarians mentioned by Humphry 84 per cent. had natural joints. Again, 74 out of 162 old people had attained the same great age without the occurrence of any serious illness whatever, while of the remainder 33 had been attacked by some form of infectious disease, mostly late in life. The freedom from "after-effects" which such histories imply doubtless contributed to the subsequent longevity. The practical hygiene of modern life has removed many of the causes which led to the epidemic outbreaks in former ages. During the past half-century the "middle arch of life" has advanced in age from about forty years to nearly fifty.[3] This means an enormous improvement in the health of the nation and a corresponding delay in the manifestations of senility, inasmuch as they mainly depend upon various structural defects due to unhealthy surroundings. The late appearance of any conventional tokens of old age, such as baldness and loss of teeth, both commonly attributable to the action of pathological microbes, must not, however, be regarded as indicating a possible extension of the period of adolescence beyond the usual time. Whether this extension can and does take place will be discussed hereafter; meanwhile we must accept all such signs as those enumerated, not as evidence of ageing, but of preventable bacterial infection which may show itself at any moment. Any indications of youthfulness which the absence of these first fruits of modern pathology may render conspicuous must be the work of the natural laws which govern growth and development in a healthy individual and not in a senile freak.

Hitherto we have considered the process of ageing in its relationship to the casual incidents of life; and we have seen what a large share morbid anatomy has in fashioning the popular concept of old age. Improved sanitation will doubtless in a future generation sweep away many, if not all, these evidences of passing ailments in old people; and so far it will check the premature development of those popularly accepted badges of antiquity above referred to. There are, however, at certain epochs of life, definite physical changes in our bodies which mark time as it were and are yet uninfluenced by health and cleanliness—at all events not to any marked extent—I allude to such incidents as the eruption of the milk teeth in predetermined order, and to their subsequent replacement by the permanent teeth; to the changes which take place in the human eye whereby the amplitude of its accommodation which is greatest at the early age of twelve years diminishes steadily, until at the age of seventy-three years it is entirely lost; to the changes of puberty and of the grand climacteric; and finally to the union of the shafts of the various long bones to their respective epiphyses which marks the cessation of growth and the time-limit of adolescence. These incidents, inasmuch as they are phases in the normal development of our bodies from youth to old age, must not be placed in the same category as the others which we have previously considered. For whereas the latter are variable as to the date of advent in different persons and are inconstant in their results, any permanent alteration in the time-limits of the former will betoken probably some racial or evolutionary change of significance.

As the period of adolescence which terminates on the cessation of growth appeared in many respects to lend itself most readily to fairly exact observation both in man and in other mammals, several well-known gentlemen interested in the breeding and rearing of farm and other live stock were communicated with and some new and valuable information was obtained. It was found in the first place that man has, either by domestication or artificial selection, shortened the duration of the adolescence in certain breeds of farm stock.[4] It is obviously to the interest of breeders in the case of those species which form an important part of the food-supply of the nation to rear animals which arrive at maturity quickly. Accordingly we find that certain breeds, such as Shorthorns and Herefords among cattle, Oxfords and Hampshires among sheep, Middle-white pigs, and Dutch and Polish rabbits arrive at full growth sooner than some other varieties of the same species. The demand for young horses although urgent is apparently not quite so pressing; yet according to my informant, a well-known breeder of English thoroughbreds and Shire horses, the former, which "are considered in their prime at the end of four years but grow even after that," are slower to mature than the latter. On the other hand, Mr. Wilfrid Blunt, to whom I am indebted for a most interesting letter, writes: "An Arab horse does not as a rule come to maturity till his eighth year. ..... He is at his prime at twelve."

It is, of course, difficult to determine the potential longevity of any particular kind of farm stock. It may be nevertheless of some interest to find from the same sources a general consensus of opinion that the breeds with a shortened youth die usually at an earlier age than the others whose adolescence is more extended. A gentleman-farmer writes: "My experience tells me that by continued selection for early fatting properties the Shorthorns and Herefords are not able to stand hard and poor living so well as Highlands and Welsh and do not live so long." Professor Blundell of the Royal Agricultural College, Cirencester, informs me that "Mountain sheep live more naturally upon herbage while Oxfords and Hampshires lose their teeth earlier and are unable to keep up their condition. ..... I think if both classes of sheep—such as Oxfords and the Mountain breeds—were allowed to go on until they die naturally the Mountain breed would live the longest, but this has not been settled by experimental test." As regards rabbits Mr. F. W. Walker, the well-known breeder of Angoras, considers that "the Polish and Dutch breeds are six weeks forwarder in maturity than some other kinds of rabbits," and that "such varieties (i.e., Polish and Dutch) have a natural tendency to live less time" than other breeds.

From the above evidence it is clear that man has by his essays in selective breeding "hurried up," as our American cousins might put it, the developmental processes of certain varieties of live stock by shortening the term of their youth. By so doing he has probably shortened the natural span of their lives also. On the other hand, I cannot find any certain proofs that the adolescence of a breed has ever been intentionally lengthened. I have little doubt if the attempt were seriously made that it would be successful. Open-air life appears, however, to be productive of long-lived, slow-growing breeds. Highland and Welsh cattle, Mountain Scotch and Mountain Welsh sheep, and Arab horses are slow to mature and are long-lived breeds. Heredity seems to participate in the production of some long-lived domestic breeds. The English thoroughbred matures more slowly than the Shire horse reared under similar conditions and a long-woolled Angora rabbit will usually outlive a Dutch coney born at the same time and under the same roof. Yet it is difficult to understand how a breed of domestic animals can without the knowledge or the wish of a breeder become decidedly longer-lived than some other varieties of the same species.

From what has been stated above it seems probable that among certain mammals a direct relationship exists between the duration of adolescence of a breed and its potential longevity. In other words, the slowly-maturing varieties are the longer-lived breeds. If now we pass from the varieties of species to the species themselves we shall find that a similar relationship exists in their case also. It is demonstrable that in certain extreme examples some such rule must be in operation. Many years ago M. P. Flourens, in a work on Human Longevity, concluded that the average age of a mammal was five times the period occupied in growth. Buffon had previously supposed that the ratio was as 7 is to 1. In neither case are the data sufficiently numerous or trustworthy to make these statements credible and in accordance with experience.

Let us now take a few examples of well-known domestic mammals of different species and compare the ratio of the length of their youth with that of their life. The potential longevity of a domestic mouse is—according to my authority, a breeder of these small rodents—about four and a half years, whilst it is full grown at the age of three months. The mouse, therefore, spends about sixteen times the span of its youth as an adult animal. Man, on the other hand, whose adolescence ceases at twenty-five, lives rarely beyond

[2] "My joints are somewhat stiff" (Tennyson).

[3] Dr. Farr, in the Thirty-fifth Report of the Registrar-General, describes the march of an English generation through life. The age between forty-five and fifty-five years is the middle arch of life, for a few months after the age of forty-five a million children born at the same time are reduced to half a million. "This age is now extended to forty-nine." A Treatise on Hygiene and Public Health, by Stevenson and Murphy.

[4] In man the sternal end of the clavicle and the crest of the ilium are not united to their respective bones until the age of twenty-five years. (Legal Medicine, by the late C. M. Tidy, M.B.) This age represents the limit of adolescence.

eighty years[5]—in other words, under favourable conditions he can only hope to pass in adult life fifty-five years, or a little more than twice the length of his adolescence. When an animal is taken for comparison, such as an Arab horse—whose youth, although longer than that of a mouse, is yet shorter than that of a man—the ratio of the two periods in this instance is as eight years to forty or as 1 to 5, so far conforming to Flourens's requirements. Yet the Arab steed passes fourth-fifths of its life as an adult. It would be tedious to multiply examples as the results of these inquiries are clearly displayed in the annexed diagram. From it we learn that as regards the animals named therein those with short adolescence pass a proportionally longer term of their lives as adults than do others with more protracted adolescence. The plotting of a definite mathematical curve was an unexpected and most interesting result of these collected data. It was made by my son, Mr. Stanley Hollis. It will be curious to ascertain when the requisite data are forthcoming whether the curve expresses the relationship between these two periods in the case of other mammals also.

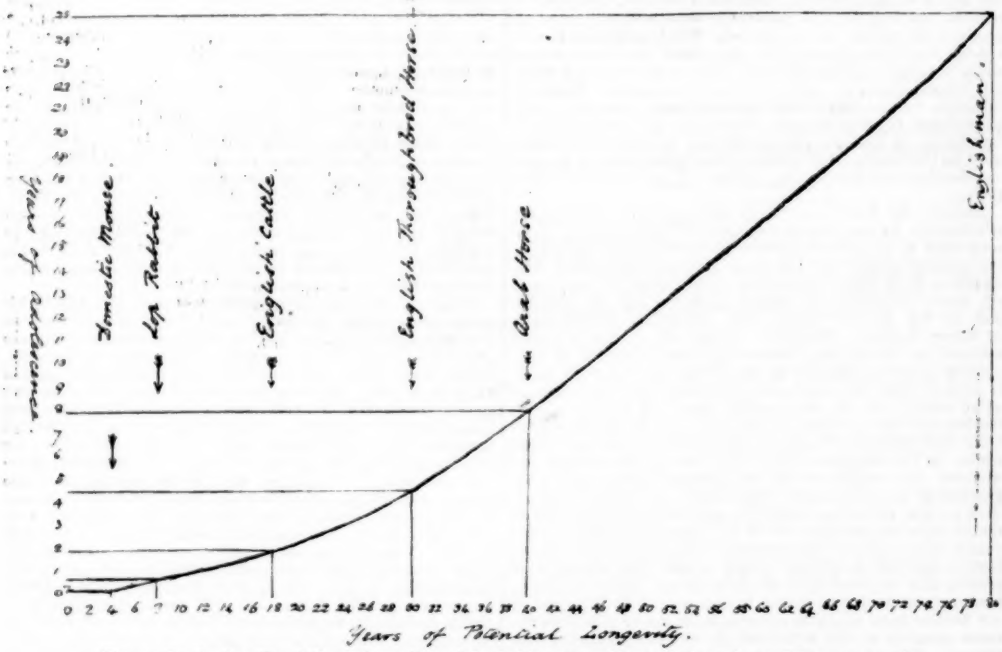

Diagram showing how the relations between the periods of adolescence and longevity in various well-known mammals can be plotted as a definite curve.

From what has been previously stated we may conjecture that individuals—if such there are among mankind—who transmit the heritage of unusual longevity to their descendants transmit also to a still greater extent a prolongation of the period of adolescence. In other words, we must expect in long-lived families indications of slow growth and a delayed maturity. If, then, the undoubted upward movement in the age of the middle arch of life to which I have elsewhere called attention is in any way due to the invasion of the conventionally discrete years of adult life by the hoydenism of youth there ought surely to be evidence in the domestic and social life of the nation of these changed conditions.

In the Fifty-ninth Annual Report of the Registrar-General of Birth, Deaths, and Marriages there are a series of tables on the age constitution of the married of both sexes. From 1874 onwards the proportion of marriages of minors has, with few exceptions, decreased year by year, and the mean of the recorded ages has, with very few exceptions, increased. Taking the 12 years immediately preceding the year 1897, when the statistics were most trustworthy, "between the first and the last of these years the increase in the proportion of bachelors married at ages between twenty-five years and forty years was so large as to balance not only the whole of the decrease, amounting to 57 per 1000 marriages under the heading 'Age not stated,' but also a decrease of 30 per 1000 marriages at ages below twenty-five years. This undoubtedly indicates a general increase in the ages at which bachelors marry. ..... Among spinsters the proportion who marry at ages above twenty-five years has also increased, but the increase is somewhat less in amount than it is among bachelors."[6] These figures may be considered too few to be conclusive yet the deferment of marriage among bachelors until adolescence is passed is too decisive a fact to be ignored. It is the educated bread-winner who abstains from matrimony until he is endowed with all the gifts kindly Nature will bestow. Hence the prudent delay. A great change is apparently coming over the domestic life of the people of which we see only the beginning, and deferment of the marriage age is one of the signs.

The group of famous veterans who continue to uphold their early reputations despite the active competition of younger men forms one of the most striking features of the present era. What age before this has produced a pathologist like Virchow who with youthful energy despite his seventy-seven years came from Berlin to London in order to deliver an oration in a foreign tongue on the most recent discoveries of medical science? Can another generation show a veteran composer like Verdi who at eighty-five years of age still fills the world with tuneful melody, or a pope with an intellect more active and a judgment more shrewd than those enshrined in the frail body of Leo XIII., two years older than Verdi? At the beginning of the present year the *Daily News* published a series of articles on the world's old people, entitled "How to Live Long." The general impression one gets, according to the writer, is that upon the whole the world's old men "have been rather a Bohemian set with hardly any hygienic principles and a strong inclination 'to do as they darned please.'" It is not surprising that the infirmities of age should be less in evidence now than formerly when we know their relationship to preventable disease. The energy, however, which enables

[5] Dr. Farr estimated the average duration of life as seventy-five years for those above fifty-one years of age.

[6] Op. cit., p. xv.

a man to take his full share in the active duties of life at the age of fourscore years and upwards implies something more than mere freedom from decrepitude. It implies a control of brain and limbs which an unusually prolonged youth alone can give. If mankind is subject to the same law that apparently regulates the potential longevity of a mammal by the duration of its adolescence this expansion of youth is to be looked for where a green old age is common. We have learnt elsewhere that there are indications that a change of this kind may be taking place among the inhabitants of these islands.

There is no doubt that the prolonged operation of such a law as I have endeavoured to describe must eventually lead to the remodelling of the whole scheme of social life. The improved sanitary conditions of modern times and the gradual education of the people in the science of living will lead to the postponement of those tokens of age which are commonly attributed to senility but are really the outcome of disease. The healthy surroundings and the freedom from the conventional trammels of old age will possibly increase among our immediate descendants the tendency to the extension of the period of adolescence beyond our own—an extension which our life tables show to have already set in. Whether the progressive slowing of man's growth and development will continue until youth usurps the whole of a long life to accomplish its behests cannot yet be answered. The pendulum of life swings backwards as well as forwards.

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OLD AGE AND REJUVENESCENCE.

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THE discomforts and miseries of old age apart from actual disease are varied and numerous and they are in general rebellious to treatment. Active medicines are apt to disagree with elderly people and a great master of medicine of the last century was wont to remark that the only drug which did them any good was sulphate of magnesia. This, however, cannot in the nature of things carry us very far. Work, abstinence, and early rising have been recommended by others and recently more particularly by Sir Hermann Weber,[1] but this must be cold comfort to those persons who have been workers, abstainers, and early risers all their lives and yet feel the trammels of senility gradually but surely closing around them. Under these circumstances a new plan of treatment which promises if not to prevent at all events greatly to retard the inroad of the disabilities of old age and to disperse them to a considerable extent after they have become established should be a welcome addition to our therapeutical resources.

When does old age begin? and of what does it consist? The number of years alone does not constitute it, for it is a matter of every-day experience that one man is fresher and younger at sixty years of age than another at thirty or forty. There is, in fact, premature old age and real old age. Let us first consider the former.

I.—SENIUM PRÆMATURUM.

In a large proportion of cases which come under our care in practice no actual disease can be discovered, yet the persons in question are so infirm that they are unable to attend to the most ordinary demands of life. Such cases occur chiefly between thirty and fifty years of age, and in men twice as much as in women. They are generally owing to hereditary predisposition, constitutional faults, certain acute infectious diseases, chronic diarrhœa, hæmorrhage, depressing emotions, overwork, and similar causes. The most important factor in their production, however, is unquestionably inheritance, and the other influences just mentioned should rather be considered as exciting causes only which are sometimes altogether wanting. Thus I have often found that the individual history of a patient was insignificant but that his father had died from phthisis at a comparatively early age or had committed suicide; that the mother had been nervous all her life or had turned prematurely grey and lost her hair; while brothers or sisters had been incapable of serious application or melancholy or hysterical. Patients of this kind suffer from premature senile involution. Although there is as yet no arterio-sclerosis all functions of the system are slowly and inefficiently performed. The appetite is poor, digestion is troublesome, defecation is insufficient, heart's action is feeble, and respiration is superficial. The habitual occupation of the patient which had formerly interested and engrossed him is felt to be burdensome and he is more or less indifferent to everything. He has an empty feeling in the head, he suffers from indecision, and he is inclined to consult others where formerly he had decided on a course of action for himself without difficulty. In the evening there is such weariness that he can hardly stir. Sleep is disturbed, and as soon as he is in bed he begins to brood over the events of the day which one and all appear to him in the most unfavourable light. He lies awake for hours and is unrefreshed in the morning. The memory is impaired and he is apt to forget the names and addresses of his friends or things which he ought to do. The sexual power is at a very low ebb, and after an unsatisfactory coition all symptoms are aggravated. The expulsive power of the bladder is enfeebled. The urine is generally normal but often contains an excess of urea and uric acid, while there is no phosphaturia which is so often met with in encepbalasthenia. The walking powers are very bad and going upstairs is exhausting. The patient often complains of a dull pain in the knees and a feeling of coldness and numbness in the lower extremities. The muscular fibre is flabby and the knee-jerk is sluggish. The hair is apt to fall out and to turn grey. Finally, there is a change in the usual temper of the patient who is apt to become testy, peevish, fretful, and utterly selfish.

I have been led to think that in such cases of senium præmaturum certain changes have taken place in the chromophile substance of the central neurons, which have been so well described by Nissl,[2] Hodge,[3] and others. When poisons, such as arsenic, phosphorus, or lead act on the nerve-cells, or when the latter have been injured by overwork or separated from their axons or centres, typical changes will follow in them which are so constant that their occurrence may be predicted with certainty from day to day. There is a swelling of the body of the cell, with granular disintegration of the chromophile substance, the spindles and granules of which lose their striped and tiger-skin-like appearance and the faculty of becoming stained. At the same time there is proliferation of the neighbouring glia-cells. Hodge has shown that in bees, after a long working day, the stained granules are diminished and vacuoles have been formed within the cell. All these changes, however, may be recovered from provided that the nucleus of the cell, which is the most important part of the neuron and which has a determining influence on the formation, metabolism, and growth of the cell, remains in its normal condition. As senium præmaturum is frequently recovered from I conclude that while other portions of the cell have deteriorated the nucleus is spared in that condition.

II.—SENIUM PROPRIUM

Our mean lifetime is at present about fifty years, but the complete cycle of physiological life, to which we ought all to aspire, is a hundred. That so few persons reach this consummation is owing to bad inheritance, mismanagement of children, neglect of the sick and aged, the large variety of bacterial poisons which make constant war upon us, improper food, unwholesome dwellings and trades, impure air, overcrowding, the habitual abuse of drugs and alcoholic liquors, sexual excesses, over-excitement of the nervous system, excessive brain-work, worry, grief, anxiety, and trouble, and accidents, such as explosions in coal mines, railway and other collisions, drowning, &c. The present average duration of life could be greatly increased, if (1) infantile mortality, which I have found to amount to not less than 40 per cent. of the entire mortality from all causes and which is principally owing to mismanagement and neglect, were reduced to its proper level; and (2) if the slums of great cities like Spitalfields, where men and women herd together like beasts under the most outrageously

[1] Zur Verhütung der Senilitas præcox, Zeitschrift für Diätetische und Physikalische Therapie, Band i., Leipzig, 1898, p. 11.

[2] Eine neue Methode zur Untersuchung der Nervenzelle, Centralblatt für Neurologie, 1891, Band xvii., p. 337, and many other papers in that journal.

[3] Changes in Ganglion Cells, &c., Journal of Physiology, August, 1894.

insanitary conditions, were cleansed both physically and morally.[4] These slums are a disgrace to our civilisation. While it cannot be mathematically proved that we ought under favourable circumstances to attain the age of 100 years this is, nevertheless, rendered highly probable by a variety of circumstances and arguments none of which, it must be confessed, have as yet any absolute value.

Centenarianism.—In the first instance we have, in spite of the unqualified denial of the late Sir George Cornwall Lewis, recently acquired trustworthy evidence of undoubted cases of centenarianism and life of some years beyond that; although we must repudiate as more or less apocryphal instances of a much higher age (even up to 185!) which have been brought forward without reliable chronological proof.

The epiphysial test.—The theory first advanced by Roger Bacon that organised beings live in proportion to the slowness with which they reach maturity has much to say for itself. Many animals which become rapidly full-grown die sooner than those in whom development is comparatively slow. But what is the test of completed growth? Flourens[5] has contended that a certain sign of it is the union of the epiphyses with the shafts of the bones; that this is in man completed at twenty years of age; and that the duration of life should be five times as much—i.e., a hundred. Thus stated the theory is open to grave objections and has certainly not as yet been properly worked out. Most observers who have investigated this subject agree that while union commences in some bones, such as the ulna and the os innominatum, about puberty, it is not finished in others, like the clavicle and the bodies of the vertebræ, before the twenty-fifth or twenty-sixth year. Professor Karl von Bardeleben of Jena, the editor of the monumental "German Handbook of Anatomy," has informed me that he has found union fully established in the sternum at twenty-eight years only and in the sacrum and coccyx at thirty years. He considers that the human skeleton is only definitely finished at from thirty-five to forty years of age and has seen lines of ossification persisting in the epiphyses of very aged people. This subject appears to be one specially suited for skiagraphic researches, the commencement of which is recorded in John Poland's[6] recent laborious work on traumatic separation of the epiphyses.

The gestation theory.—The theory first started by Buffon that the duration of life depends upon the time occupied by gestation fits as regards a number of animals—such as the rabbit, the guinea-pig, the cat, the bitch, the pig, the wolf, the jackal, and the lioness—but is inapplicable to others—viz., the mare, the ass, the monkey, and the elephant.

Professions and occupations.—How much longevity depends upon professions and occupations has been well shown by the tables of comparative mortality compiled by Dr. William Ogle. It is a reproach to us as a profession that while the clergy stand at the head of the list we are very far down at the bottom, medical men being much worse off in this respect than coal-merchants, grocers, and milkmen, and actually on a par with stone-quarriers. Such a reproach we should endeavour by every means in our power to wipe out as speedily as possible.

Old age begins, as a rule to which there are exceptions, in men about sixty years of age and in women after the change of life has been completed, and is the inevitable consequence of arterio-sclerosis which sets in about that time of life and causes involution of the central neuron. There are at first those changes which we have seen to occur in senium præmaturum—that is swelling of the body of the cell and disintegration of the chromophile substance. I contend, however, that in senium proprium the lesion has a tendency to invade the nucleus of the cell likewise and is therefore of far more serious import than where the substance of the nucleus remains in a good or at least fairly satisfactory condition. When the entire substance of the neuron has been attacked by the change an enormous proliferation of the glia-cells necessarily follows, and when these alterations have once been fully established it is evident that an integral restitution of the neuron becomes impossible. In proportion, therefore, as tissues of a lower type take the place of the neuron the higher functions of the nervous system are bound to suffer. Nuclear wasting appears to occur first in the giant cells of the central convolutions and it extends after a time to the anterior and posterior centres of association, the sensorial centres, the bulb, and the spinal cord. The grey cortex thus dies first and the medulla oblongata last. Pathological anatomy has shown that in the brain of old people the nerve-cells have perished and have been replaced by overgrowth of the neuroglia which appears interspersed with large numbers of amyloid granulations. The chemical composition of these structures is likewise altered, the fatty matter being reduced while water and phosphorus are increased. The cerebral arterioles eventually become filled with fatty granulations and cholesterine, and atheromatous degeneration of the blood-vessels leads to a narrowing and finally to occlusion of their calibre which in its turn is followed by capillary embolism, senile gangrene, and other retrogressive changes. The effects of the senile involution of the neurons are habitually first seen in the sphere of the voluntary and involuntary muscles. The movements lose their previous strength and precision. The erect position of the body suffers; there is tremor of the head and hands, a tottering gait, and difficulty in standing for any length of time. In sitting the upper portion of the body is inclined to fall forward. The grasp of the dynamometer is diminished and in advanced cases quite absent, and the tendon reflexes are sluggish or lost. These symptoms are in the first instance owing to failure of power in the sensory motor centres in the Rolandic convolutions; but as the anterior cornual grey matter begins to suffer likewise atrophy of the muscles sets in, causing the emaciation so characteristic of old age, while at a still later period true fatty degeneration of the striped muscular fibres occurs, more especially in the lower extremities, leading often to complete paraplegia. Such changes in the muscles also cause the peculiar alteration of the countenance in the aged, the features becoming wrinkled, angular, and shrivelled. Up to a certain time the mental faculties of the aged may remain well preserved, and this must be directly proportional to the nutrition of the nerve-cells in the anterior and posterior association-centres (Flechsig). Where this continues satisfactory elderly people may still have a good memory, a sober and incisive judgment, and readiness in counsel and action. But sooner or later the intellect is likewise impaired, so that there is a difficulty in fixing the attention on a given subject and sustained mental efforts become impossible. A change in temper is likewise noticed. Self-control is lost and depression is apt to alternate with undue irritability. The aged become petulant, selfish, and indifferent to the usual interests of life and to their family. The memory for recent occurrences becomes a blank. If such persons live long enough senile dementia is the ultimate result, when only the ordinary automatic functions of life are performed, while the intellect and initiative of the individual have perished.

As the nutrition of all the tissues and organs of the body depends upon the integrity of the neurons it is easy to understand the other changes which take place in the body when inferior and indifferent formations are substituted for the superior and highly elaborate nervous mechanisms which are characteristic of health. The teeth fall out and the hair becomes grey or white owing to loss of pigment, or it falls out through atrophy of the follicles. The net of capillaries in the skin, the mucous membranes, and the principal viscera is greatly impoverished. Atrophy of the cardiac centre in the bulb leads to degeneration of the cardiac muscle which is shown by shortness of breath on moderate exertion, palpitations, and a weak and irregular action of the heart. Wasting of the renal and sudorific centres in the bulb causes the quantity of urine and sweat to be diminished. This latter change explains the peculiarly harsh and dry condition of the skin which we find in the aged. The temperature of the skin is generally diminished, although some observers state that they have found it increased, and the thermometer gives quite different readings in the axilla and the rectum, while in youth and adult life there is much less difference between the two. Finally, atrophy of the respiratory centre in the bulb leads to degeneration of the pulmonary tissue, followed by diminution of the quantity of oxygen absorbed and carbonic acid exhaled. Eventually the nervous influence carried by the pneumogastric to the lungs becomes so feeble that pneumonia of a low type is caused which resembles the pneumonia following upon experimental section of the vagus, and this is the most frequent cause of death in the aged.

[4] A few days after penning these lines Lord Iveagh's splendid donation for the removal of a notorious slum in Dublin was announced. *Vivat sequens!*

[5] De la Longévité Humaine, &c., fourth edition, Paris, 1860.

[6] On Traumatic Separation of the Epiphyses, London, 1898; The Skiagraphic Atlas, 1898

TREATMENT OF OLD AGE.

What can be done to retard the progress of senile involution? Sir Henry Halford,[7] who wrote an able paper on "Climacteric Disease," concluded it by saying that he could not be expected to propose a cure for it. In fact, he had no suggestion to offer beyond a caution not to meet the symptoms of the trouble by two active a treatment. Whatever weakened the system must be detrimental, and he pronounced more especially against purging and bleeding. Madame de Staël remarked that the great agents for retarding the inroads of old age were exercise, study, and love, and there is much hidden wisdom in these recommendations which it is, however, often very difficult to follow. My theory that degeneration of the neuron is the base of all forms of senile involution leads irresistibly to the conclusion that the progress of the latter can only be retarded by causing an improvement in the nutrition of the neuron, and experience has led me to think that we possess such a remedy in the careful and appropriate use of the constant galvanic current. In order to make this proposition intelligible it is necessary for me to go back to the earlier period of my electro-therapeutical work which now extends over more than forty years. I then had frequent opportunities of noticing when treating patients suffering from certain neuroses such as Graves's disease, paralysis agitans, hemiplegia, tabes, &c., that the affection for which they had consulted me was often only slightly improved but that their general strength which had been greatly reduced was habitually much increased by the treatment which they had undergone. Such was the case with regard to bodily as well as mental energy; and for this reason they were often very much pleased with the results of the treatment, although the actual disease for which they had sought relief continued unchecked. Observations of this kind eventually became so numerous that I was after a time led to use electrical treatment with preference in exhaustion of the system, after medicinal or hygienic means which had been previously employed had proved unsuccessful. It is a singular fact that although electricity has been used more or less scientifically in medical practice for about half a century—viz., since the epoch-making researches of Duchenne de Boulogne and Remak, yet the opinions of neurologists as well as of practitioners concerning the actual value of this remedy are still found to vary considerably. While, for instance, Möbius[8] is altogether sceptical on this point, Eulenburg[9] asserts that electricity is of little use except in the treatment of paralytic conditions. On the other hand, Apostoli[10] and the modern French school founded by D'Arsonval,[11] speak highly of the effects of static electricity and alternating currents in certain disturbances of metabolism, such as gout, rheumatism, and diabetes. Singularly enough, however, the effects of electricity *as a general tonic* in conditions characterised by debility and exhaustion, which I consider to be by far the most important of all, have been unduly neglected by authors as well as by practitioners. It is just in this class of cases which are constantly met with in practice that we are able, by means of a systematic use of the constant current applied to certain portions of the brain, to obtain striking and often actually brilliant results. It is true that general faradaisation, the use of the hydro-electric bath, and the so-called central galvanisation have been much recommended and employed in such cases, yet I have no hesitation in stating that these latter procedures are tedious and inconvenient in their application and of subordinate value in their results. In senium præmaturum the results of an appropriate electrical treatment of the brain are indeed habitually excellent and this can only be explained by assuming that the nutrition of the central neuron is improved by the action of the constant current and after a time brought back to its normal state. Almost all such patients get rapidly well, without the aid of any other treatment. The average duration of a course is a month or six weeks. Dr. Harry Campbell[12] has, in an able essay on the marriage of the unfit, spoken of premature senility as a bar to marriage and would urge on the children of parents who have become prematurely grey and have shown signs of arterial degeneration in their thirties to abstain from wedlock so as to help towards the elimination of a prematurely senile and neurotic type. As such a proposal, if accepted, would condemn a large number of people to celibacy, I trust that the treatment for the improvement and eradication of the type which I am advising will render such abstinence in many cases unnecessary.

In cases of senium proprium, more especially in its early stage, I have likewise found that we are able by a cautious use of the constant current to the brain, and more especially to the vaso-motor centre in the bulb, greatly to retard the progress of the arterio-sclerosis and the involution of the central neuron. A week or two after the commencement of such a treatment the energy of the system is habitually found to have been considerably enhanced. The old man takes fresh interest in the affairs of daily life, he resumes his work with some amount of vigour, he has a more erect attitude, he walks and stands better, and he has a quicker digestion and a healthier sleep. His general aspect is so much changed that he looks five or ten years younger than before the treatment was commenced. His peevish and querulous temper is no longer a source of trouble to his friends. In bald people the growth of the hair is stimulated and when grey or white it may resume, at least to some extent, its previous brown or black colour. In about 40 per cent. of such cases treated by me in this manner the results were noted as "very good," in another 30 per cent. as "fair," and in the last 30 as "insignificant." In no case, however, was the treatment entirely useless and the function which improved in every one of them was that of walking. Quite recently a veteran actor who had delighted the last generation by his magnificent Shakesperian performances, told me, after a few applications: "I no longer *crawl* but *walk*," and a composer of music of advanced age and bowed down by many infirmities volunteered the remark: "I no longer *walk* but *fly*; and young fellows have now a difficulty in keeping up with me." The longer such treatment is continued in a given case the better are in general the results, and I have come to the conclusion that if old people receive about the sixtieth or sixty-fifth year, or indeed at any time when age has begun decidedly to tell upon them, proper and faultlessly carried-out applications of electricity to the brain, either daily or every other day for some time, they may keep their faculties fairly well until the age of eighty or ninety, unless the case should be complicated with serious organic disease of the nervous system or other important organs, such as paralysis agitans, insular sclerosis, cancer, contracted granular kidney, fatty degeneration of the heart, &c. For such complaints we cannot expect much from a galvanic treatment which finds its principal sphere of action in cases of uncomplicated senile involution.

I do not consider it necessary to give a detailed description of the various methods which I am in the habit of employing for galvanisation of the different territories of the brain, as I have recently done so in another place.[13] I will therefore only remark that some of these procedures are old and others new; that I have tested them all carefully for many years past; that they are based on, and have been developed from, clinical experience, while the physiological explanation of their beneficial effects which I have been able to submit has only been rendered possible much later, in proportion as our doctrines on the histology and physiology of the brain have gradually become more developed. I would therefore refer those who wish for detailed information on this point to my work "On Failure of Brain Power." By means of the procedures described I have succeeded in improving or restoring the health of the aged or prematurely aged in a comparatively short time and without the aid of other active treatment. The duration of the good effects is in senium præmaturum mostly permanent—if anything can be called permanent in this life—unless particularly unfavourable events should occur to those concerned. In true senility the galvanic treatment has to be repeated from time to time, as the natural course of events implies progressive arterio-sclerosis and further destruction of tissue; yet it is surprising to see how well many aged persons "wear" if they undergo occasional courses of this treatment. Any practitioner who will closely follow the rules which I have given

[7] On Climacteric Disease, Transactions of the Royal College of Physicians of London, vol. iv., 1813.
[8] Über Electro-therapeutische Arbeiten, Schmidt's Jahrbücher, Band ccxxi., p. 81; Band ccxxix., p. 81.
[9] Electrotherapie und Suggestions-Therapie, Berliner Klinische Wochenschrift, 1892, No. 8 and No. 9.
[10] Various papers in Le Bulletin Officiel de la Société Française d'Électrothérapie, Paris, 1896 to 1898.
[11] Action Physiologique et Thérapeutique des Courants à haute fréquence, Annales d'Électrobiologie, Paris, 1898, p. 1.
[12] An Essay on the Marriage of the Unfit, THE LANCET, Sept. 10th, 1898.
[13] On Failure of Brain Power (Encephalasthenia), its Nature and Treatment, fifth edition, London, 1898, pp. 259-265.

will obtain equally beneficial results in the treatment of these cases as I have had for so many years past myself; but it is absolutely indispensable to be very strict with regard to the work. It is notorious that electricity is frequently applied in the most careless and haphazard manner and this explains why so many persons are sceptical concerning its curative effects. An application of the constant current to the brain during which not the slightest fault has been committed is in a certain sense an artistic performance which requires not only knowledge but also much practice and some talent like a good musical performance. How often does one hear a sonata by Beethoven or a polonaise by Chopin actually murdered? The same applies to electrical treatment. A man who labours with love and care and has the discrimination to select one of the methods described by me or several of them which may be particularly appropriate for a given case will in the nature of things obtain better results than another whose heart is not in his work, who acts by mere routine, and who is devoid of the elements of an artistic disposition or true clinical instinct.

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SURGERY IN THE GRÆCO-TURKISH WAR.

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SURGEON TO OUT-PATIENTS TO THE EVELINA HOSPITAL; LATE CHIEF SURGEON TO THE "DAILY CHRONICLE" NATIONAL FUND FOR GREEK WOUNDED.

(Concluded from p. 83.)

THE CASES.[1]

Mortality.

OF 114 bullet and shell wound cases treated to a termination 6 died (mortality 5·26 per cent.). These included 1 death from septic pneumonia secondary to extensive comminuted fracture of the base of the skull and both jaws (Case 4); 2 deaths in cases of wounds of the intestine, neither of which was fit for operation (Cases 28 and 30); 2 deaths from rapid emphysematous gangrene (Cases 87 and 88); and 1 death from septic embolism following a bullet wound of the knee-joint treated conservatively (Case 91). Of 24 medical cases 4 died (mortality 16·6 per cent.). These included 2 cases of dysentery, 1 case of pneumonia, and 1 case of renal disease.

Treatment.

All cases on admission were cleaned up and dressed antiseptically. Only obvious bullets and fragments of clothes or bone were removed at this time and no tinkering or probing was allowed. No drainage was used primarily. Syringing and irrigation were only used for removal of macroscopic débris. The dressings were changed as little as possible and only when indications to do so occurred. Even where no first dressing had been applied, as was the case in numbers of the wounded, the entrance wound was so small that there was very reasonable hope that the deep parts were not infected. Though we did not receive most of the cases at Chalcis till 36 hours, and at Phalerum till 48 hours, after the wounds had been inflicted, and although the majority had had no dressings, we treated them as clean wounds unless there were plain indications to the contrary. I ascribe much of our success to the wounds not having been tampered with before they reached us. Better no dressing, and no unreliable probes or fingers in the wound than too early interference. All work at the actual front should be most rigorously confined to the application of dressings and fixation apparatus excepting only in the case of urgent hæmorrhage and other emergencies and the surgeon at the front is almost safer without probe and forceps. Now that all our soldiers carry an antiseptic first dressing every man can give his neighbour not only makeshift, but the best possible, help. The wounded came down on horse and foot—ambulance wagons were impossible in the passes. They ran in this way less chance of infection in transit. The Greek peasant only drinks resin wine and no spirits. Drunkenness is almost unknown in the country districts and this was much in their favour.

Bullets in situ.

Eighteen bullets were found in the body and were all removed with a single exception. This was a bullet in the lung discovered by the x rays (Case 21). Of these 18, 2 only were Mausers and 1 a shrapnel ball, the remainder were Martinis. The small proportion of Mausers found in the body was no doubt due to their greater penetrating power. The Mauser bullets had both been stopped by bone, one by vertebræ, the other by the humerus. The nose in each case was much flattened out. Of the 15 Martini bullets only 6 had struck bone. Some were quite unaltered, others were much changed or even broken up. Several were found under the distal skin which alone had prevented their emergence. There need be no hurry to remove deep bullets. They are better cut down on by a fresh clean incision than searched for through a long track, likely, at any rate near the surface, to be septic. The bullet itself was aseptic in all but one case. In this man there was an entrance wound over the left lower ribs, the track passing downwards and backwards. Increasing tenderness developed over the left loin. Three weeks after injury the temperature rose and deep fluctuation was felt in the spinal muscles at the level of the upper lumbar vertebræ. The abscess was opened and an unaltered Martini bullet removed (Case 19).

Flesh Wounds.

The penetrating flesh wounds were all treated alike—cleansed and an antiseptic dressing placed over each opening. Many healed without any complications. In others there was slight skin sloughing, more commonly round the hole of exit than of entrance. Sometimes there was a prominent button of granulations, also more common on the exit side. Others became inflamed and began to discharge. These were opened up at one or both ends and in nearly all fragments of clothing were subsequently discharged and were doubtless the source of infection. Creolin was found to be the best lotion for septic sinuses. I several times excised septic superficial sinuses in their whole length, thus getting a clean wound which was sutured and this saved time in healing. Where there had been much sloughing or immediate destruction of skin, as in wounds by shell fragments, so soon as they were clean we used Thiersch's skin-grafts. Drainage and counter-openings had sometimes to be employed in undermined and lacerated wounds. The hole of entrance of the Mauser was generally extremely small, only taking a probe, and twice was overlooked till on the operating table. In other cases a definite circle of skin had been punched out. The Mauser exit hole was often not much larger. There is much more skin damage when the bullet strikes obliquely. Immediate tendon suture is impossible in bullet injuries owing to bruising of parts. This does not hold in sword-cuts, where tendons should be sutured as soon as possible. Wounds by shrapnel were scarce; I only had one under me and saw two others in the Greek hospitals. One of these we detected by the x rays.[2] No wounds of great vessels were treated. The hospitals were too far from the front for this. In several the great vessels had escaped in an extraordinary way, but the only secondary hæmorrhage was from the temporal artery in a case of fracture of malar, &c. (Case 10).

The cases of nerve involvement were as follows:—

CASE 57. *Bullet-wound of the brachial plexus.*—The bullet had entered in front of the upper arm, crossed the brachial plexus and passed out far internally in the posterior axillary fold. A piece of cloth was removed from the anterior wound. There was great pain, especially at night and in the course of the median nerve, with hyperæsthesia over its distribution. The median thumb muscle wasted and also the posterior scapular muscles. The other median muscles remained. No operation was done.

CASE 59. *Bullet-wound of the brachial plexus.*—This case is also described under "Wounds of the Lung." There was intense pain down the inner side of the arm and forearm into the hand and wasting of the ulnar hand muscles. The pain became worse and the patient could stand no movement or jarring in the ward. The damage was explored one month after injury by a longitudinal incision on the inner side of the arm including the scar in an ellipse. The nerve trunks were freed above and below. The ulnar was found included in dense scar tissue and was partially divided by the bullet. The scar was firmly adherent deeply into the

[1] The cases are numbered throughout for reference.

[2] THE LANCET, Jan. 14th, 1899, p. 82.

TABLE GIVING SYNOPSIS OF THE CASES OF COMPOUND FRACTURE.

No.	Age.	Locality.	Treatment.	Remarks.*	Result.†
4	?	Temporal: superior and inferior maxillæ.	Removal of bone; incisions for cellulitis.	Mauser; septic pneumonia; 8 days.	D.
8	18	Nasal bones and orbit.	Cleansing under anæsthetic.	Shot wound; traumatic hare-lip; injury to third nerve.	R.
9	25	Malar and orbit.	Excision of the eye; sequestrotomy subsequently.	Rupture of the globe; necrosis.	C.
10	30	Malar and nasal bones.	Excision of the eye; ligature of the temporal artery.	Secondary hæmorrhage from temporal artery.	C.
11	30	Inferior maxilla.	Splinters removed.	—	C.
12	25	Inferior maxilla: fourth cervical vertebra.	Cleansing operation; removal of the bullet; abscess opened.	Wound of the pharynx; deep abscess of the neck.	C.
16	?	Inferior maxilla.	Removal of the bullet and splinters.	Œdema of the glottis.	C.
36	28	Phalanges of the fingers.	Amputation of the fingers.	—	C.
37	30	Phalanges of the fingers.	Amputation of the fingers.	—	C.
38	28	Phalanges of the second finger.	Conservative.	Enormously swollen.	C,
40	27	Second and third metacarpals.	Antiseptic.	Roentgen rays (Fig. 3).	C.
41	25	Fifth metacarpal.	Antiseptic.	Roentgen rays; shaft blown away.	C.
42	?	Carpus and metacarpus.	Trimming amputation.	Dynamite accident.	C.
43	?	Carpus and metacarpus.	Trimming amputation.	Dynamite accident.	C.
52	31	Right radius.	Antiseptic.	No displacement; no necrosis.	C.
53	30	Right radius and ulna.	Antiseptic.	Much swelling; good movement ultimately.	C.
54	30	Right radius and ulna.	Cleansed under anæsthetic.	Roentgen rays (Fig. 4); passive movement and massage.	C.
61	27	Left humerus.	Secondarily opened up under anæsthetic.	Involvement of the elbow-joint; superficial suppuration.	C.
62	29	Right humerus.	Bullet removed, and cleansed under anæsthetic.	Surgical neck; much comminution; movement fair; aseptic course.	C.
63	26	Right humerus.	Wound cleansed and fragment of bullet removed; bullet removed 5 weeks later.	Mauser; suppuration posteriorly; much callus round second quarter; necrosis; Roentgen rays (Fig. 6).	C.
64	32	Left humerus.	Antiseptic.	Condyle involving elbow-joint; synovitis of joint.	C.
66	21	Right scapula.	Splinters removed; antiseptic.	3 bullet holes made by the same bullet; bullet not found.	C.
88	?	Left femur.	Amputation of the thigh in upper third (fourth day).	Extensive comminution of the middle third; emphysematous gangrene.	D.
89	30	Right femur.	Four fragments of the bullet removed; counter openings, drainage, &c.	Septic on admission; extensive comminution of the middle two-fourths; union.	C.
90	28	Left femur and patella.	Joint drained and bone removed.	Joint full of breaking-down clot on admission; temperature elevated for a week; some movement.	C.
91	44	Right patella and tibia.	Removal of the bullet from the tibia; drainage of the knee-joint.	Septic on admission; septic embolism.	D.
92	29	Left tibia.	Antiseptic.	Vertical fracture.	C.
102	?	Left tibia.	Drainage; exploration under anæsthetic.	Septic on admission; junction of upper and middle third; scale of bullet removed in England.	C.
103	?	Right tibia.	Antiseptic.	? Fracture of the fibula; anterior border of the tibia carried away in middle third.	C.
104	25	Right tibia.	Wounds plugged.	Fissured fracture just below the knee.	C.
105	27	Left tibia.	Incision; drainage; removal of bone.	Septic on admission; extensively comminuted in lower third; lymphangitis.	C.
106	30	Left tibia and astragalus.	Cleansing and drainage.	Ankle-joint involved.	C.
107	29	Right tibia, os calcis, and astragalus.	Antiseptic.	Ankle-joint involved.	C.
111	?	Right fibula.	Irrigation and antiseptic.	Large hole; necrosis.	R.
112	25	Left os calcis.	Bullet removed; sinus plugged.	Stellate fracture; lymphangitis.	C.
113	30	Right os calcis.	Antiseptic.	Clean perforating hole.	C.
114	47	Phalanges of the foot.	Amputation of toes.	—	C.

* The Roentgen rays mentioned refer to the illustrations in THE LANCET of Jan. 14th.

† C = cured, R = relieved, D = died.

biceps. A dense scar band also passed across the median. The ulnar was thickened above the point of partial division. All scar tissue was excised and the nerves were cleared. The patient lost his pain after operation.

A case in which a shrapnel ball pressed on the external popliteal nerve and was excised has been mentioned under "The Roentgen Rays."[3]

Compound Fractures and Wounds of Joints.

In all cases of compound fracture, whether involving joints or no, the treatment was thorough cleansing, when necessary under an anæsthetic. Bullets were removed and loose fragments of bone, though these latter were preserved where possible. All joint operations were informal and partial, and everything was saved that could reasonably be. Drainage was never employed except for sepsis and deep syringing was avoided. The military surgery of the limbs will in future consist almost entirely of these cleansing and "tinkering" operations and the minimum of interference should be sedulously aimed at. Natural curiosity to know the full extent of the damage must be checked. Even where no first dressing has been applied, as was proved in numbers of our cases, the entrance wound is small and often protected by scab, so that there is very reasonable hope that the deep parts are not infected and no inquisitiveness should risk this advantage.

[3] THE LANCET, Jan. 14th, 1899, p. 82.

The later bone operations were several of sequestrotomy and drainage. All the big joints of the limbs except the hip were involved in different instances. These were treated conservatively and the limbs saved except in the patient in Case 91, who, I think, lost his life through delay in amputating. In this series of cases the only primary amputations were in the hand and foot. There was one secondary amputation of the thigh in the upper third. Plaster-of-Paris splints were used whenever possible, otherwise improvised wooden splints. In a good number the callus thrown out was considerable, in a few surprisingly large, this depending on the periosteal damage and small enclosed sequestra. The binding down of muscles and tendons which had been involved in the wound was troublesome, especially at the wrist and ankle, and needed massage and even forced movements under anæsthetic. This danger was anticipated and these cases were early taken down and moved, so I think it is an unavoidable sequela and not a fault of treatment.

I was struck by the large number of wounds of the lower part of the leg and foot, and especially of the heel, as shown both among fractures and wounds of soft parts. The explanation is that these wounds are not received standing, but when lying down behind earthworks, which if not high enough will only protect the anterior part of the body. There is also with many a natural tendency to raise the feet in the air when firing in the prone position and thus make them the most vulnerable part. The accompanying table gives a synopsis of the cases of compound fracture, 37 in all, with a few details.

CASE 4. *Compound fracture of the temporal, superior and inferior maxillæ; death.*—The patient was admitted from one of the earlier engagements four days after receipt of the wound (Mauser bullet). The hole of entrance was extremely small, just admitting a probe, on the back of the lower part of the left concha auris. The exit hole was also small, not half an inch across, through the lip below the right ala nasi. The track penetrated the petrous bone, breaking the lower wall of the meatus and glenoid fossa and smashing the left condyle of the lower jaw and the left superior maxilla. The whole of this side of the hard palate was blown away with the alveolus, and the antrum was opened widely into the mouth and nose. Much brawny infiltration ensued over the parotid region. Incisions were made and the condyle was resected in splinters. Septic diarrhœa and pneumonia with suppression of urine set in and death occurred on the twelfth day after injury.

CASE 12. *Compound fracture of the inferior maxilla and cervical spine; wound of the pharynx.*—The entrance wound was over the lower half of the right ramus; it was an extensive fracture with much swelling. Exploration was made and the incision prolonged to the neck, exposing the wound of the pharynx. Splintering was found at the left side of the front of the body and the root of the transverse process of the (?) fourth cervical vertebra. The hole could be felt, but no bullet. Subsequently a Martini bullet was felt lying almost under the skin at the level of the lower cervical vertebræ behind and removed. A tube was inserted down to the pharyngeal wound through which food came. Five weeks later a deep offensive abscess was opened on the right side of the neck. This entirely healed. There were no nerve symptoms throughout.

CASE 88. *Compound comminuted fracture of the femur; acute traumatic gangrene; amputation of the thigh; death.*—The patient was wounded on May 18th. The wound of entrance was small, in the middle of the outer side of the left thigh. It was two days old and looked slightly inflamed. The femur was extensively comminuted. Exploration was made under anæsthetic for temperature; the knee-joint was free; the bullet was not found. A counter incision was made on the inner side of the thigh. Rapid emphysematous gangrene ensued on May 22nd. The man looked extremely ill, sweated profusely, and his skin was cold and clammy. The subcutaneous tissue and intermuscular planes contained much gas. Rapid brown discolouration under the skin extended with definite edge up to Poupart's ligament. The thigh was amputated at the upper third; the patient died during the night five days after the injury. I made an error of judgment in attempting to save this limb. The comminution and longitudinal splintering were very extensive. I might have been successful but for the acute traumatic gangrene. Another patient, whose notes follow, was also wounded on May 18th in the Phourka Pass, came in on May 20th, was in the same ward, and developed the gangrene on May 21st. This case I had not touched except to dress. Whether they were both infected outside or whether Case 88 was infected from the other man I cannot tell.

CASE 87. *Bullet wound of the thigh; acute traumatic gangrene; death.*—The patient was wounded on May 18th and admitted on the 20th. There was a small hole in the upper posterior part of the left thigh, looking like a deep graze, and the track passed deeply from this. On May 21st the patient had three rigors. Towards evening he sweated profusely and the thigh swelled with much pain. The thigh became tense, swollen, and discoloured, and brownish discolouration extended rapidly on to the lower abdomen. There was much emphysema, especially over the lower third of the thigh, but slight crackling extended even on to the flank. Amputation was out of the question in his condition. Long incisions were made, gas bubbled out, and the fœtor was great. The patient sank rapidly and died at 3 A.M. on May 22nd.

CASE 89. *Compound comminuted fracture of the femur.*—In this case the bullet was extracted from the back of the thigh. There was a small healthy wound at the outer anterior aspect of the junction of the lower and middle third of the right thigh. There was a large sloughy surface, 4 in. by 2 in., over the middle third posteriorly. This led to the femur, which was splintered in six pieces. The patient was examined under an anæsthetic and four fragments of lead were removed. A counter opening was made lower down as there was pocketing of pus. A long outside splint was applied. There was much suppuration and several pockets of pus were opened. His condition fluctuated considerably. There was some necrosis, but he eventually did well. Union was firm on discharge and the shortening was 2 in.

CASE 90. *Compound fracture of the femur and patella; knee-joint involved.*—The patient had had no splint on for some days when brought down. The lower third of the thigh and knee-joint were much swollen. There was a small clean opening in the popliteal space and a sloughy opening at the upper part of the patella. There was œdema over the outer side of the joint which was full of fluid. The joint was drained by lateral incisions two days after admission. Many fragments of bone were removed from the knee-joint which was full of softening blood-clot. The joint was washed out. All the tubes were removed in six days. The temperature was up for one week and then normal. The result was slight backward displacement of the tibia. The patella was moveable and there was slight flexion and extension at the knee-joint. The x rays showed oblique fracture of the femur and some (? fibrous) attachments of the patella to the femur.

CASE 91. *Bullet wound of the knee-joint; septic embolism; death.*—The wound of entrance was small, at the inner side of the upper border of the right patella. The temperature was up on admission. The joint was opened by an oblique incision from the original wound. A Martini bullet which was firmly impacted in the outer tuberosity of the tibia was removed. A fragment had been knocked off the patella. There was turbid fluid in the joint. The joint was washed out and drained. The temperature was 103° F. at the time of the operation; it steadily sank and was normal in four days. It then began to rise, the joint suppurated, and steady septic temperature ensued. Sudden collapse with difficulty of breathing occurred eighteen days after injury and death ensued in a few hours. This man, an officer, unlike our other cases, was a heavy drinker. He was also forty-four years of age. I think I did right to attempt to save the limb, as proved by the course of the case at first. But when the temperature rose again I should at once have amputated the thigh. Difficulty with him and his friends caused delay and the sudden death occurred.

Head and Neck.

Not a single case of brain injury came down to me. Judging by the number of wounds of the face and neck many such must have occurred. I assume that they were rapidly fatal. Two eyeballs had to be excised for gross injury. Another, wounded by small shot, had partial injury to the third nerve (paralysis of the internal and inferior rectus with sphincter pupillæ) and loss of sight on the nasal half of the field of vision. A case of penetrating wound of the floor of the mouth had much subglossic swelling and commencing œdema of the glottis which subsided on opening a deep abscess under the tongue. Another instance of œdema of the glottis occurred in a transverse wound of the neck in which the

bullet was extracted from beneath the opposite sterno-mastoid. The exact course could not be determined. A penetrating fracture of the cervical spine (Case 12) has already been described. Another bullet (a Mauser) was found much flattened against the vertebræ which were unbroken.

The Chest.

Of 11 cases of bullet wound of the chest 6 certainly involved the pleura and lung. 9 were cured and the other 2 were doing well when I left Greece. In 3 cases the bullet ran round the chest outside the ribs. In one of these the track suppurated, discharging bits of cloth. It was laid open, the whole track excised, and the wound sutured. The bullet in the second (Case 19) caused an abscess in the lumbar muscles and was cut out. The third patient had pain in a precisely similar position; a skiagram showed nothing, but the pain was so persistent that the spot was explored with negative result. The 6 cases involving lung and pleura were briefly as follows.

CASE 20. *Penetrating bullet wound of the lung.*—The entrance wound was beneath the right clavicle in the anterior axillary fold. There were ecchymosis and emphysema over the lower ribs in front. Below the seventh rib on the abdominal wall was a long, vertical, furrowed wound of exit. The bullet certainly ran deep to the ribs. A considerable quantity of fluid developed in the right chest but was absorbed without anything further being done.

CASE 23. *Penetrating bullet wound of the lung.*—The patient in this case spat up much blood directly he was shot and continued to do so slightly up to admission. The entrance wound was below the centre of the right clavicle. The exit wound was inside the vertebral border of the scapula between the sixth and seventh ribs. There was surgical emphysema behind and much blood was extravasated into the tissues. Fluid, probably blood, was present up to the nipple in front and the spine of the scapula behind. There was spitting of blood for 7 days. As the dulness cleared up there was tympanitic resonance over the lower part of the chest posteriorly and to a less degree in front with *bruit d'airain* over the lower part of this area. The patient recovered. (Mauser bullet.)

CASE 59. *Penetrating bullet wound of the lung.*—In this case the bullet had passed through the arm over the brachial plexus and through the chest. He had hæmoptysis at the time of injury, continuing for 7 days and recurring a week later. Four pints of bloody serum were withdrawn by the aspirator 3 weeks after injury. Subsequent operation for nerve involvement, q.v. (Mauser bullet.)

CASE 60. *Penetrating bullet wound of the lung.*—This patient was shot through the right arm and chest, having four openings in the course of the bullet in a transverse line at the nipple level with the arm dependent. The bullet did not knock him down and he went on fighting, spitting a dozen mouthfuls of bright blood after injury. He was still coughing bloody mucus on admission. No abnormal physical signs developed in the chest. (Mauser bullet.)

CASE 21. *Bullet wound of the lung; bullet in situ; empyema.*—In this case the bullet entered the left shoulder anteriorly through the fore part of the deltoid, passing downward and inward. There was no fracture. The patient was very ill on admission. There were signs of consolidation in the whole of the lower lobe and upper lobe posteriorly. The wound was septic and was opened and plugged. On the eighth day there were signs of fluid at the left base; none was found by needle. On the tenth day there were fluid at the right base and crepitations over both lungs. On the fourteenth day 47 oz. of bloody fluid with slightly offensive smell were aspirated on the left side. On the sixteenth day a rib was resected and 2 pints of pus were evacuated. The pleura was drained. No bullet was felt. The patient made steady improvement. The pleura was nearly closed when we left. A skiagram showed a bullet in the lung (Fig. 7 in THE LANCET of Jan. 14th, 1899).

CASE 25. *Bullet wound of the liver and the lung; abscess of the liver.*—In this case there was a grooved wound over the upper part of the abdomen to the left of the sternum. The other wound was below the seventh right rib near the posterior axillary border. There were no signs in the chest or abdomen on admission. On the fourth day he was very ill, with painful, rapid respiration. A friction rub was heard. On the seventh day there was membrane over the fauces and uvula, clearing on the ninth day. Friction was heard in the right axilla. On the thirteenth day there was puffiness around the axillary wound, from which clear fluid, probably pleural, escaped. It was lightly drained by gauze. On the fifteenth day there was a sudden rise of temperature to 105° F. A drainage-tube was inserted and much clear serum escaped. On the sixteenth day lobar pneumonia of the left lower lobe was detected. On the nineteenth day the temperature continued almost equally high. More fluid escaped by the tube. On the twentieth day he suddenly began to cough up bile and pus in the sputum. The serum from the wound became purulent and deeply bile-stained. On the twenty-fifth day he was improving. The crepitations on the left side were reduced. The sputum and serum were still bile-stained but much less so. Steady improvement took place from this time onward. On discharge the anterior wound had quite healed. The posterior was a mere sinus with scarcely a drop of pus and no bile.

It will be noticed that 3 of the 4 wounds of lung with which we had least trouble were due to Mauser bullets. The ribs escaped fracture in all cases.

The Abdomen.

Several bullets travelled considerable distances in the abdominal wall without entering the peritoneal cavity. One, a Mauser, entered just below the crest of the right ilium in front of the centre, was deflected by the bone without fracture, and passed out through the upper part of the right rectus 1 in. below the costal margin. A clean punched-out plug of leather cut from his belt and of the same diameter as the bullet was discharged by the lower wound (Case 27). One abdominal section was performed.

CASE 29. *Bullet wound of the abdomen; hæmorrhage; abdominal section.*—The patient had been wounded for thirty-six hours. There was a small wound of entrance over the eighth left costal cartilage 2½ in. from the middle measured along the costal margin. The exit wound was over the middle of the back of the left loin below the last rib, small but larger than the entrance wound. His general condition was one of exhaustion with rapid pulse. The abdomen moved well. There was some distension and a considerable quantity of free fluid in the abdomen, causing shifting dulness in both flanks with some fixed dulness on the left side. Liver dulness was present and there was no blood in the urine. The operation was performed four hours after admission by a median incision above the umbilicus. Dark blood escaped in quantity on opening the peritoneum and much more when the hand was inserted. There was no wound of the peritoneum opposite the entrance wound, but a hole was found in the parietal peritoneum below the costal margin near the tip of the tenth rib and a bleeding point was found here. No lesion of the intestines, mesentery, or omentum was found. The spleen was intact. The wound was closed with silkworm gut. There were no complications.

Two cases of bullet wound of the intestine were neither suitable for operation.

CASE 30. *Bullet wound of the small intestine, bladder, and rectum (Mauser).*—This patient was admitted on the ninth day. The wound of entrance was in the left iliac region and the exit in the right buttock close to the great sacro-sciatic notch. There was no general peritonitis. The anterior aperture was sloughy and discharging urine, which had burrowed under the skin, the latter having a greenish discolouration. Direct communication with the bladder could not be made out, but urine bubbled out on coughing. An incision was made in the left side downward from the wound exposing a foul cavity from which sloughs were removed. A long tube was introduced through which urine drained into a receptacle under the bed. Per rectum two openings could be felt. The one in the anterior wall communicated with the bladder and the postero-lateral one with the wound in the buttock. This wound was opened up, the sloughs were removed, and it was packed with gauze. On the eleventh day there was enormous discharge anteriorly, consisting of chyme, pus, blood, and urine. A catheter was tied in the bladder. On the twelfth day the dead skin and sloughs were removed revealing a hole 2 in. above the pubes barely admitting the little finger. This, when followed up, exposed a large part of the cavity of the pelvis filled with sloughs, pus, and fæces. The intestines had been raised out of the pelvis shutting off the abdominal cavity by dense adhesions. The bladder with the catheter in it was to the right but its wound could not be defined. Pressure here caused a flow of urine into the cavity. The wound in the buttock continued dry without

urine or fæces. A large tube was inserted into the depth of the pelvis. Death occurred on the fourteenth day.

In this case a Mauser bullet had traversed the small intestine, wounding it high up judging from the contents, the bladder and rectum, and out through the buttock. All the palpable holes were small and clean cut; the immense sloughing was secondary and due to sepsis.

CASE 28. *Bullet wound of the small intestine.*—The patient was wounded forty-eight hours before admission. There was a double wound in the right groin, the holes of entry and exit being respectively 2 in. above and below Poupart's ligament. There was another wound, due to a separate bullet, 2 in. above and internal to the left anterior superior spine, surrounded by reddened skin, and from this fæces were running. There were marked signs of general peritonitis with constant vomiting and his general condition made operation impossible. He lived till the eighth day.

Another case (Case 24) in which the liver was wounded with formation of an abscess has been already described under "The Chest."

CONCLUSIONS.

The Roentgen rays should always, if possible, be available at that hospital nearest the front in which the wounds can be first properly examined and dealt with.

The electricity should be derived from a secondary battery consisting of separate covered cells charged from the nearest town, a man-of-war or other steamer, or by means of a cycle motor, as has been recently done in the Soudan by Major Battersby, R.A.M.C.

The skiagrams should be taken on to Eastman's positive paper which is sufficiently satisfactory for the detection of foreign bodies.

The apparatus is of no use on the field where the detection of bullets can only be an incentive to premature exploration.

The less wounds are tampered with before satisfactory surroundings are reached the better. All difficult bullets should be removed by a fresh incision and the track ignored.

The modern bullet from its greater penetrating power will be much less frequently found in the body than its predecessors. It is practically aseptic and there is no urgency for removal.

The hole of entrance is often extremely small. Suppuration is generally due to pieces of clothes carried into the tissues. Superficial septic sinuses should be excised. Wounds of lung by modern bullets run a comparatively favourable course.

Small-bore bullets may bore through a bone without causing any line of fracture whatever and every degree of injury from this up to the most extensive comminution may be met with.

Passive movements and massage when possible should be begun early in bullet wound fractures.

Welbeck street, W.

NOTE ON A CASE OF BILHARZIA DISEASE.

BY EDWARD CURETON, M.D. BRUX., M.R.C.P. EDIN.,
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AND
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PATHOLOGIST TO THE SALOP INFIRMARY.

A RESIDENT of Shrewsbury, aged forty-one years, who was occupied as a scavenger, died suddenly on Oct. 5th, 1898. He had suffered for some time from shortness of breath and from attacks of the nature of angina, but had not had any medical advice. An examination of the body twelve hours after death revealed a few old pleuritic adhesions, the lungs being otherwise normal. A white patch was noted on the anterior surface of the left ventricle. There was old-standing disease of the aortic valves and an aneurysm admitting the whole thumb occupied the posterior left aortic sinus extending into the adjacent coronary artery. The left ventricle was hypertrophied. The liver was somewhat enlarged and hard. The spleen which was about twice its usual size was very dense, hard, and dark coloured. The right kidney was enlarged, being double the size of the left one and showing signs of chronic congestion. On removing the intestines nothing abnormal was noted until the head of the cæcum came in view, when the large size of the appendix arrested attention. It was twice the size of the natural part and was bulbous or distended at its extremity which had a gritty feeling. It was non-adherent, bluish in the middle, and yellowish at the extreme end. Several hard nodules of the size of a mustard-seed projected slightly beneath the peritoneal surface of the part. The heart, portions of the liver and spleen, and the appendix were removed for examination. The liver was congested as also was the spleen. On making sections through the nodules or tubercles of the appendix each nodule was found to consist of several areas of dense connective tissue the fibres of which were arranged in a more or less circular manner so as to surround and include certain peculiar bodies, apparently parasites. These lay in groups of 3 or 4 but in some places 15 or 20 could be counted in one space. They varied greatly in shape but were mostly oval, one end bluntly rounded and the other more or less pointed and often terminating in a distinct spike. The average length was about 0·06 mm. In some places only the shrunken capsules of the parasites were seen, in which case the appearances were very puzzling and at first slightly suggestive of some kind of crystalline deposit. Staining was difficult and only effected by a prolonged stay in strong carbolic fuchsin. In this way it was possible to distinguish a transparent capsule which only stained very slightly and coarsely granular contents which were more deeply coloured. The parasites were exceedingly brittle and fragile, so that the slightest pressure on the cover-glass caused fracture of the capsule. Many of them were so shrivelled and altered in shape as to be unrecognisable and it was only by finding one here and there still retaining the shape characteristic of the ova of bilharzia that it was possible to be sure that this was a case of old-standing distoma disease.

Upon inquiry it was ascertained that the deceased had been in the army from June, 1883, to 1889. He was in South Africa, at Pietermaritzburg, in 1886, and in Egypt and Malta in 1889. He had had fever and ague when in Egypt and had also had a "touch of the shakes." No doubt he became infected by the parasite whilst in Egypt.

Professor Sheridan Delépine of Owens College, Manchester, has kindly examined some of the sections of the appendix. He considers the appearances to be characteristic of distomatosis.

AN INTERESTING CASE OF CÆSAREAN SECTION IN PRIVATE PRACTICE.

BY A. LUCETTE HOME, M.B., B.S. LOND.,
LATE HOUSE SURGEON AND OBSTETRIC HOUSE PHYSICIAN,
ST. THOMAS'S HOSPITAL.

AT 2 A.M. on Oct. 23rd, 1898, I was called to attend a patient in her fifth confinement. She was thirty-three years of age and had had three living children and one (premature) stillbirth. The labours had all been tedious affairs and the children big, but in no case had instruments been required. On this occasion pains had started about the 17th, had continued then some few hours and ceased again, to reappear at intervals on succeeding days. During the 22nd the pains had been present nearly all day, though not severe enough to make it necessary to send for me till early next morning. On my arrival at about 3 A.M. the pains were recurring every five or ten minutes. The membranes were unruptured; the presentation was right occipito-anterior, and the os was soft and dilateable, of the size of half-a-crown. At 6 A.M. the membranes were tense and bulging, the os was softer and admitted four fingers readily, while the head had made no advance; the pains continued vigorous, so I ruptured the membranes. At 7.30 A.M. the head, which lay rather forwards over the pubes, had not descended at all; the os was thick and œdematous and the patient was becoming exhausted. I noted at this time that the promontory was very easily reached with the finger, the conjugate diameter being about 3½ in. I applied the Barnes-Simpson forceps, but the head was too high to permit of easy locking and the patient too fidgety to allow of their use without an anæsthetic. I got the patient under chloroform, the continuance

of which I had to entrust to the woman in attendance, while I first made an attempt to apply forceps. This failing I tried version and brought down both legs quite easily but could not get the body to budge an inch; neither by pressure on the abdomen nor internally, on the head, could a single movement be got. At 9 A.M. I returned home (three miles) to fetch a perforator and a cephalotribe returning about 10 A.M. I again chloroformed the patient as before and perforated easily. Crushing was, however, much more difficult owing to the height of the head in the pelvis; and though I made several attempts to drag down the head with the cephalotribe in order to get at more distant parts the blades slipped off every time. Finally, at 11.45 A.M. I sent for assistance and Mr. Scudamore kindly came at 1.15 P.M. The cephalotribe, however, was not more useful in his hands than in mine, so that we decided upon embryotomy, for which purpose I was forced to go home again to fetch instruments; among these I brought a scalpel and bistoury but no artery forceps or silk. Embryotomy was, we found, extremely difficult owing to the tightness of the uterine contraction now getting tonic; and as the patient's condition was growing very bad (she had already required three injections of strychnine and brandy) immediate Cæsarean section was decided on, and this I did at 3 P.M. Without waiting for any ritual observance as regards cleansing the abdominal wall, but merely hastily swabbing over with a 1 in 40 carbolic solution, I opened the abdomen. There was, luckily for me, no hæmorrhage from abdominal wall or uterus; the placenta we had noted to be on the posterior wall. The child was rapidly and easily extracted, the placenta peeled off readily without any loss, and as the liquor amnii had already drained away there was no soiling of the peritoneum. Introducing a carbolised marine sponge into Douglas's pouch I found that there was practically nothing there, so I at once sutured the uterine and abdominal walls, using silkworm gut sutures and my perineum needle for each. A cyanide dressing was then applied. The patient, who had till now been resting on the mattresses of her bed, was carefully lifted up on to the bed and surrounded with blankets and hot water-bottles; and she slowly rallied again. The operation had lasted almost twenty-five minutes. From the commencement of cephalotripsy the total period of anæsthesia was five and a half hours (from 10 A.M. to 3.30 P.M.), added to which she had had about one hour in the early morning (from 7.30 to 8.30 A.M.). The fœtus, a finely-developed female, weighed fully 9 lb. without brains, and was over 20 in. in length.

The after-progress of the patient was slow but on the whole satisfactory; constipation and flatulence were the chief drawbacks. The stitches were removed from the wound on Nov. 2nd and it then appeared soundly healed, but on Nov. 6th the lower angle reopened to give vent to a quantity of broken down, foul-smelling blood-clot; this discharged for a few days only and then the opening slowly closed up. The highest temperature throughout was 100·6° F. The patient on Nov. 29th was downstairs and getting about again, though not of course performing her household duties.

I have to record my grateful thanks to Mr. Scudamore for his kind and able assistance.

Kingsbury, near Tamworth.

WRITERS' ANGINA.

BY CHARLES D. MUSGROVE, M.D. EDIN.

THE above title is one which I have adopted to designate certain attacks which have come under my notice as occurring in individuals who are liable to be called upon to "write against time"—this latter phrase implying more than simply writing rapidly, for, as will be explained shortly, it is when a given amount of writing must be completed in a limited space of time that the factors which are efficient in disturbing the cardiac mechanism are brought into play. I have selected the above title because it signifies both the cause and the character of the disturbance thus induced, and I have felt justified in the use of the term "angina" from the close resemblance which these seizures bear, not only in their outward manifestations but, which is infinitely more important, in their intrinsic nature to the malady known as "angina pectoris." It is the accepted use of the latter term which constitutes one of the chief difficulties in the discussion of cardiac phenomena. It would simplify matters considerably were a writer able to state in a paper of this kind that he intended to regard angina pectoris as a symptom merely; but the term has acquired such an individuality as representative of a distinct clinical entity that for the present it is hopeless to attempt to divest it of this significance, and we must content ourselves with regarding angina pectoris as a malady characterised by certain classical symptoms of which pain in the region of the heart is a predominant one, and having an importance due mainly to its liability sooner or later to end fatally. When, however, we approach the discussion of allied seizures, such as those forming the subject of the present paper, some form of title must be sought which will serve to indicate their nature. "Angina-like attacks" is too clumsy and "angina" suggests itself as at once the most suitable and convenient. If this be prefixed by a term expressive of the conditions under which the attacks occur these latter are furnished with a title which not only indicates their character but also makes clear the distinction between them and angina pectoris properly so called. This distinction is one of vital importance to the safety and comfort of the patient—for his safety in that the cause of the seizures being removed he may avoid the ill-effects liable to ensue from a frequent repetition of the same; and for his comfort in that he may be assured that the attacks from which he suffers are of a curable nature if he will but follow out the directions given to him.

It is only by a minute inquiry into the circumstances under which the attacks take place and the discovery that they occur *solely* at times when the patient is engaged in hurried writing that we are able to assure him as to the nature of his complaint. The symptoms correspond so closely to those of angina pectoris that it is impossible by a consideration of these alone to eliminate the latter from our diagnosis, and if in addition the patient be at or above middle age the difficulties are still further increased unless the above-mentioned fact in the history of the attacks is inquired into. Observe, however, that I have used the word "solely," for, of course, in a patient who is undoubtedly the subject of angina pectoris genuine angina pectoris may be induced by the effort of writing hurriedly just as by any other form of exertion (which is an entirely different matter). To take a typical case: a business man finds late in the afternoon or evening that he has, say, an hour's correspondence to get through in half that time, and makes a spasmodic attempt to finish it, hurriedly scrawling off one note after another with anxious glances at the clock meanwhile. He is suddenly alarmed by finding himself seized with a pain in the region of the heart, behind and to the left of the sternum, with a feeling of tightness and oppression about the chest and a sensation as if the heart were going to burst, followed by a number of violent pulsations which one patient graphically described as his heart "turning somersaults," while in some cases the face is covered with a cold sweat. He throws down his pen, leans back in his chair, takes a number of deep breaths, and in a few minutes is comparatively well again, but on resuming his work is again alarmed at finding sooner or later the same train of symptoms repeating themselves.

Before considering the nature of this disturbance, it is necessary to discuss the causes which bring it about. These may be considered under three headings—(1) the concentration of the mental faculties; (2) the posture, and the cramping of the muscles; and (3) the state of the respiration.

To take the last first, a man who is engaged in hurried writing seems to discover, almost unconsciously it may be, that he has not even time to breathe properly, and his respiration tends more and more to consist of short breaths confined to the upper part of the thorax. This condition is further aggravated by the position which he tends to assume, twisting himself round until the left side of his chest is almost in contact with the desk, so that abdominal or deep thoracic respiration is an impossibility. Meanwhile his fingers have become rigid and this rigidity has communicated itself to the muscles of the forearm and thence to those of the upper arm and chest, whilst an observer may soon satisfy himself that even the muscles of the lower extremities have been called upon to contract in the same useless manner. It is evident that as a consequence of the abnormal state of the respiration the right side of the heart must tend to become more or less engorged, while at the same time, owing

to the amount of muscular rigidity, an extra demand is being made upon that viscus, so that its accelerator nerves are called into action, and this is still more evident when we remember that meanwhile the first of the causes mentioned—viz., the concentration of the mental faculties—is of itself causing an increased rapidity of the heart's action, thus shortening its period of systole and rendering it least effective in dealing with the engorgement of its cavities. This increase in the heart-rate plays an important part in the production of the symptoms, and is still more obvious from the fact that it is impossible to bring these on experimentally by breathing shortly or even holding the breath altogether. This latter procedure may set up a feeling of discomfort in the region of the heart, but so far as I have been able to ascertain it entirely fails to bring about the peculiar sudden pain and other symptoms which I have already described as characteristic of this malady. It seems to me, however, that even these combined causes are not sufficient to account for the climax which occurs and that a satisfactory explanation of the latter is to be found only in the consideration of the state of the coronary arteries at the time. It appears obvious that with the short, ineffective beats of the heart these vessels are unable to furnish the myocardium with a sufficient supply of blood, especially as it is being called upon for an extra amount of work at the time. In the next place it is feasible to suppose that the increasing venosity of the blood due to the inefficient character of the respiration has induced a state of vaso-motor constriction in which it is possible that the coronary arteries share. If this be so it is evident that we have to deal with a heart the muscular substance of which is receiving a supply of blood which is not only deficient in quantity but unsuitable in quality and which is consequently in a state of what I would term "temporary malnutrition." Hence it is not surprising that when this stage is reached the heart should cease to respond to the demand of the accelerator nerves which must have already been in action for some time and that symptoms of a violent and distressing nature should ensue. In introducing this element of vaso-motor spasm of the coronaries I am fully aware that it is a subject upon which much scorn has been cast and writers have not been infrequently reminded that they had better have left it out of their calculations until something definite was known about it. This, however, it appears to me, would have the effect of barring our way to any further knowledge of the subject, for it is difficult to conceive that any data can be obtained on the point by experimental investigation on account of the impossibility of approaching the structures concerned. Bearing in mind the fact that the coronary arteries represent practically the sole supply of blood to the heart substance, it certainly appears improbable that these vessels should be devoid of any controlling agent in regard to the amount of blood passing through them, and that their tension should be dependent entirely upon that within the aorta; and the only probable and efficient factor which is conceivable to my mind is that of vaso-motor influence. That this influence has suggested itself to the minds of writers on allied subjects is evident from the not infrequent mention of it in the literature of cardiac disease. Dr. G. W. Balfour,[1] for instance, remarks in connexion with angina pectoris: "There is every reason to suppose that the arterial spasm which is so evidently the cause of local asphyxia and which takes so prominent a share in the production of an attack of angina vaso-motoria occasionally invades the heart either as part of a general or it may be as a distinctly local affection, and that this is a very possible cause of those anginal attacks where no other seems obvious." Sir R. Douglas Powell[2] also in an article on the myocardium in "Allbutt's System of Medicine," says: "There is every reason to believe that the coronary arteries, like other vessels of equal size and equally endowed with muscular tissue, are liable to spasmodic contraction." In the case of the malady we are now considering this element would certainly appear to furnish a link without which an analysis of the symptoms is incomplete. It is advisable in passing to emphasise the fact that vaso-motor spasm is not suggested here as a direct cause of pain in itself but as a factor in the production of that temporary change in the nutrition of the myocardium which I have suggested as contributing lately to the crisis of which pain is a predominant symptom.

We are now in a position to discuss the nature of this crisis and the position which it occupies in the scale of cardiac phenomena—its relationship to palpitation with its attendant discomfort on the one hand and angina pectoris with its acute pain and anguish on the other. From simple palpitation the diagnosis is easily made from the peculiar nature and onset of the symptoms. From angina pectoris, on the other hand, the differentiation is one of deep interest; the difficulty lies in the circumstance that the literature of angina is "confusion worse confounded," owing to the fact that the distinction has so frequently been made from a superficial comparison of symptoms. Some, for instance, would settle the matter by calling it "false angina"; but here again each author appears to have his own method of separating true from false, deciding the question by the presence or absence of pallor of the face, the compressibility of the pulse, the sense of impending death, the age of the patient, and so on. If, however, we confine our attention to those authors, such as Dr. G. W. Balfour, who discuss the subject of angina from the standpoint of its intrinsic nature instead of from mere superficial resemblances, the question quickly resolves itself.

Dr. Balfour appears to trace the progress of an attack of angina pectoris in three stages—(1) a permanent malnutrition of the heart-substance; (2) a call upon the augmentor nerves of the heart to which the heart fails to respond; and (3) a secondary affection of the associated spinal nerves resulting in pain. Now, the explanation which I have offered above of the attacks which I have termed "writers' angina" is that the respiratory embarrassment, the muscular rigidity, and the mental concentration have combined to hurry the heart and to render it ineffective and thus to deprive the coronary arteries of their due amount of blood—this possibly being further diminished by a vaso-motor spasm of these vessels—and that the heart is consequently in a state of "temporary malnutrition." The accelerator nerves of the heart have of course already been called upon to act, and my point of view is that as this temporary malnutrition is established there must come a time when the heart ceases to respond to the demand of the augmentor nerves and that the crisis of the attack is thereby precipitated. In angina pectoris the heart is *unable to respond* to the call of the augmentor nerve; in "writers' angina" it *ceases to do so*. But the intrinsic difference lies in the permanent nature of the malnutrition in the former and its temporary character in the latter, due to a distinct and removeable cause, to which our treatment must be directed. This treatment consists in explaining to the patient the why and the wherefore of his malady and in insisting upon his engaging in his correspondence deliberately and quietly. Furthermore, he must be instructed as to the way in which he is to sit, so as to prevent him assuming the cramped and twisted position into which he is so liable to lapse, as already described. The simple manœuvre of crossing the right leg over the left renders this attitude almost impossible, and as a consequence enables the writer to breathe more deeply, so that by this means alone we are enabled to eliminate one or two of the most important factors concerned in the onset of the symptoms.

It only remains to consider the ill-effects of this condition.

1. In those who are otherwise healthy a state of cardiac irritability is apt to be induced and to be kept up so long as any repetition of the attacks takes place. As yet I have not been able to satisfy myself that dilatation of the heart-wall follows as a consequence of these attacks. It is not unreasonable, however, to infer that such a result is only too likely to occur, seeing that the two chief elements concerned in its causation are present—viz., (*a*) over-distension of the cavities of the heart and (*b*) diminished power of resistance due to temporary anæmia in the muscular substance, while it seems only too probable that the substance will sooner or later tend to give way before the recurring outbursts of pressure to which it is subjected.

2. With regard to those who are already suffering from dilatation I can affirm from observation that the condition is aggravated by the attacks. One case in particular which I had the opportunity of closely watching illustrated this. It was that of a medical man who, after an attack of acute rheumatism, suffered from symptoms of a cardiac affection, diagnosed by one of the leading authorities as dilatation. With treatment the patient improved to such an extent that he could take moderate exercise without distress, but any

[1] The Senile Heart, 1894.

[2] Allbutt's System of Medicine, vol. v. 1896: Diseases of the Myocardium.

attempt to write hurriedly invariably brought on an attack such as I have described above, followed by symptoms which clearly pointed to an aggravation of the cardiac mischief, more particularly to an increase of the dilatation of the right cavities.

3. In those who are the subjects of valvular disease there is considerable danger of increasing the cardiac trouble. One case illustrated this in a marked manner. The patient was a young man whom I had previously treated for mitral regurgitation. He had steadily improved, competency was established, and the amount of regurgitation had become comparatively slight. One evening he was called upon to finish a number of documents in a hurry; he suffered, as he was doing them, from his heart in the manner which I have described above and on the next day he felt too ill to go out. On my being called to see him I found him in a half-fainting condition with a scarcely perceptible pulse but with a pronounced apex-beat, a markedly accentuated pulmonary second sound, and other evidences of considerable mitral regurgitation. Such a result occurring suddenly seems explicable only on the hypothesis of an interference with the blood-supply to the myocardium, the condition which I have described above as temporary malnutrition. It may be argued that the latter is of too short a duration to have any appreciable influence on the muscular tissue of the organ, but it must be remembered (*a*) that the regurgitation itself would in its turn tend to keep up the diminution in the amount of blood passing through the coronary arteries, and (*b*) that pathological changes in the left ventricle taking place as the result of anæmia of its substance are apt to occur with surprising rapidity. While I do not wish to infer that the changes in this case were of a permanent nature still it is feasible to suppose that a serious weakening either of the papillary muscles or of the fibres surrounding the mitral orifice had occurred, with the result above described.

4. The dangers of this condition in middle-aged or elderly persons, especially those presenting any signs of atheroma, are too obvious to need more than a mere mention. In such cases it is of the utmost importance to warn the patients against the harm of writing in a hurry. They are not likely to injure themselves by hill-climbing or athletics and they have probably learned by experience that it is better for them not to run upstairs or hurry to catch trains, but it has never dawned upon them that in their daily correspondence they are liable to a form of exertion equally dangerous both in its immediate and its more remote effects.

Penarth, South Wales.

POST-DIPHTHERITIC PALSY OF THE OCULAR MUSCLES.

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FROM time to time cases have been recorded where palsy of the extrinsic ocular muscles has followed diphtheria. A glance at the scattered literature shows that the condition may involve one or several muscles and that it may or may not be associated with paresis of accommodation. For instance, in the cases of Henoch and of Heinz the external recti suffered; in Rumpf's patient the internal recti were paralysed; and in Kraus's case the superior oblique of one side was affected. The levator palpebræ superioris may be attacked either by itself (Callan) or along with other muscles (Benson and Ewetzky). Extensive paralyses amounting to ophthalmoplegia externa have been noted by Donders, Hasche, Uhthoff, and Mendel among other writers. It is scarcely necessary to say that these affections may occur as a sequel to diphtheria of any part of the body. Dr. W. Gayton[1] recorded a case where diphtheria of the genital organs was succeeded some three weeks later by palatal paralysis and "marked strabismus."

The general view that post-diphtheritic paralysis of the extrinsic ocular muscles is infrequent is endorsed by Gowers in his widely-quoted "Manual of Diseases of the Nervous System" (1888). On page 178 of that invaluable work it is stated that "a rare cause of palsy of the external muscles is diphtheria." Despite this expression of opinion from so distinguished an authority our experience leads us to believe that as a matter of fact such cases are not very uncommon, although they may not often be brought for treatment to hospital unless the eye condition is complicated by some more serious and striking form of paralysis. In support of this view we are able to quote two recent cases which have fallen under our notice in consecutive months at the North-Eastern Hospital for Children, Shoreditch.

CASE 1.—A girl, aged nine years, was admitted to the hospital under one of us on April 13th, 1898. Seven weeks prior to coming under notice she was treated at home for what was described as "an ulcerated throat." During the last two or three weeks the mother had noticed that the child experienced difficulty both in swallowing and in breathing and that fluids taken by the mouth were apt to return through the nose. The mother further stated that for the last week the sight had been so bad that the patient "could not read print at all." On admission, the child was found to be anæmic with well-marked nasal phonation; the soft palate was immobile on phonating, while on being touched no reflex was elicited. There was slight ptosis. The pupils were large and equal; they reacted sluggishly to light and not at all to accommodation. The extrinsic eye muscles were paralysed except the external recti and (possibly) the superior oblique. There was therefore a condition of crossed diplopia. Refraction (estimated by direct ophthalmoscopic examination) was—right eye 2 D. and left eye 3 D. of hypermetropia. The fundi were normal except for the existence of a congenital crescent (Fuchs) at the lower part of each optic disc. The gait was weak with a tendency to sway and fall; the knee-jerks were absent. The movements of the diaphragm on respiration appeared to be deficient; respiration was markedly thoracic. The heart was normal; the pulse was 100, regular, and compressible. The urine was 1020, acid, with no sugar or albumin; there was a slight deposit of phosphates. The patient was kept in bed, placed upon full diet and port wine, and given half a drachm of Easton's syrup thrice daily. She gradually improved. The ptosis disappeared after she had been a week in hospital and by this time the diplopia had lessened and slight movements of the affected eye muscles could be made out. Improvement continued until May 13th when she was discharged on account of infectious disease in the ward. Some five months later (Oct. 19th, 1898) the child was brought to the hospital for examination. The gait was strong; the knee-jerks were present, and the palatal reflex was normal. The pupils were equal and contracted both to light and to accommodation. There was no strabismus and binocular vision was present. Amplitude of accommodation was—right eye 12 D. and left eye 13 D.

CASE 2.—A boy, aged five years, was brought to the hospital on May 18th, 1898, suffering from a strabismus said to have been present for one week only. His mother's story was that at the beginning of April the child developed a sore-throat associated with feverishness and swollen cervical glands. On May 11th she noticed that his left eye turned inwards and further inquiry brought out the fact that the lad had "talked thick" for about five days before the strabismus came on. Upon examination there was a convergence of the left eye measuring on the perimeter 30°, while the so-called secondary deviation of the other eye was 40° or more. Owing to the tender age of the child the diplopia that was present could not be investigated with any satisfactory result. There was a distinct reduction of the outward movement of the squinting eye. Letters of No. 1 Jaeger could be read. The fundi were normal. The gait was unsteady and there was a tendency to fall when the patient attempted to run or to turn quickly; the knee-jerks were absent. The palate was normal; the voice was not nasal. The pulse was 100 and regular. The urine was free from albumin. The child was thin, white, and looked rather ill. On June 1st one drachm of Parrish's syrup was ordered three times a day. When seen a week later (June 8th) the strabismus had disappeared but the knee-jerks were still wanting. On June 20th the latter had returned, although the patient was stated to be still "weak on his legs." He eventually made a complete recovery.

From the foregoing remarks it will be noticed that one of our patients suffered from paresis of the external rectus without affection of accommodation, whereas the other

[1] THE LANCET, May 28th, 1898.

manifested a complete, or almost complete, paralysis of the extra-ocular branches of the third nerve, together with impairment of the function of accommodation. In both cases there existed the signs of a more generalised diphtherial poisoning, as shown by paralysis of the palate and lower extremities, with loss of their reflexes. It is satisfactory that both children made so good a recovery under the simple means adopted.

A CASE OF ACUTE PURPURA HÆMORRHAGICA; RECOVERY.

BY E. RUMLEY DAWSON, L.R.C.P. LOND., M.R.C.S. ENG.

THE patient was a girl, aged two years and eleven months, and was first seen by me at midday on Sept. 6th, 1896. Her family history on both sides was good, there being no record of rheumatism or suspicion of hæmophilia. She had not had any children's complaint whatever, either measles, scarlet fever, or whooping-cough. She was, in fact, a thoroughly healthy girl, but during the last two weeks of August, 1896, she had had toothache on and off and during that time had slight epistaxis—i.e., a few spots only of blood from the nose once or twice a week. During this last week—viz., the first week of September—she seemed to be quite well. On the night of Sept. 4th the toothache returned and lasted during the following day. She had an egg for dinner that day and went to bed at night all right, but her mother noticed that the urine which she passed was of a deep-brown colour. At 2 A.M. on Sept. 6th the child woke wanting to pass urine which was done with pain and crying. The mother then saw that there was a rash about the child and that what she had passed into the utensil was about half a pint of very nearly pure blood. The mother was sure that there was no eruption about the child when put to bed. The child kept dozing after this till 4 A.M. when she dropped off to sleep soundly till 7 A.M. At 9 A.M. epistaxis began and it continued with varying intermissions till the afternoon. At midday on examination I found the child to be well nourished and in clean and healthy surroundings. She passed urine in my presence and I saw that it was a small half-pint of nearly pure blood, coming per urethram. Her temperature was normal and the pulse was 126. The child showed abundant spots or petechiæ, varying in size from a pin's head to a sixpenny-piece, not raised or itching or fading on pressure; in colour they were deep aniline blue, purple, rose-red, and dark-red, and were situated on her left cheek and forehead, the lower part of the abdomen, the hips, and on both legs, with one or two spots on each foot and one on the left forearm. She was given a mixture of citrate of iron and ammonia with syrup. At 2 P.M. hæmatemesis came on and recurred three or four times afterwards. Urine was passed again at 4 P.M., nearly half a pint of blood as before, and was passed with pain, no blood coming from the vagina. Two doses of medicine had been given but as it seemed to induce vomiting, and that was of blood, the medicine was stopped and only ice was given to suck and to swallow. One or two petechiæ were seen on the roof of the mouth. After 4 P.M. epistaxis from both nostrils was continuous. The bowels acted at 7.30 P.M. without bleeding. Oil of turpentine was now added to the previous medicine and was given hourly. At my next visit, at 9.30 P.M., the room looked like a slaughter-house, everything being spattered with blood. The child's temperature was normal and her pulse was weaker and still 126. She was very restless, throwing herself about and crying out in pain, especially in the abdomen; she was covered with blood and it was impossible to thoroughly examine her owing to her restlessness, so I was unable to say whether the gums and mouth were bleeding themselves or whether the blood spat out and removed by her fingers came only down from the nose. She wished to pass urine and I helped to set her on the utensil in the bed; this at once induced syncope and, in fact, for some time I thought that she was dead, so that she was laid down again without emptying the bladder. At 11.15 P.M. I saw the child again. There was no more hæmatemesis but her nose was still bleeding. In my presence she passed lying down, about an ounce of pure blood per urethram with pain. She had nothing but ice, brandy-and-ice, and medicine with ice. She was *in extremis*, almost pulseless, and very blanched.

It now occurred to me to do what I should have done for an adult with severe uterine hæmorrhage—i.e., to give a deep injection of ergotin into the buttock, so I gave a 5 minim injection into the left buttock of injectio ergotini hypodermica B.P. The hæmorrhage stopped almost immediately, like turning off a water-tap. Slight epistaxis recurred at 12.30 A.M. on Sept. 7th and lasted for about a quarter of an hour. She slept soundly till 5 A.M. when she awoke to vomit some "coffee-ground" material. At about 4 A.M., while asleep, she passed a brownish motion without any bright blood into the bed. At 6 A.M. she passed about 2 oz. of urine of a smoky-brown colour. There was some delirium during the night. At 11 A.M. her pulse was 156 and was better and stronger. Many more petechiæ were visible; there was no hæmatemesis, epistaxis, or sickness. At 12.45 P.M. she passed 2 oz. of urine of a brown colour together with a dark-red clot of the size of a florin. She slept during the afternoon. At 3 50 P.M. she passed just over 1 oz. of urine which was of a paler brown than before. During the night of Sept. 7th–8th she was restless. On Sept. 8th her bowels were not opened and there were no hæmorrhages. She passed urine seven times after 6 P.M. on Sept. 7th of a pale brown colour. She took beef-tea and brandy. Her breathing was harsh and noisy and her nostrils were blocked with clotted blood. On Sept. 9th and 10th a steam kettle was kept going in the room. There were no more petechiæ or hæmorrhages. The child slept badly and was delirious. On Sept. 11th urine was passed three or four times into the bed. The child was very restless during the night. More petechiæ appeared; the breathing was still noisy; but she had no cough. On Sept. 12th the bowels were opened twice. The urine was of a pale brown colour. The child was better; her breathing was better and less noisy. Two or three shirt-button-sized hæmorrhagic lumps appeared beneath the skin. During the night of Sept. 12th–13th there was very slight epistaxis, but there was none during the day on Sept. 13th and there were no more spots. The child slept well and her breathing was good, but she took her food badly. On Sept. 14th her left ear discharged pus. On Sept. 15th the urine was more abundant and was of a pale brown colour. Both ears were discharging with some pain in them. Food was taken badly. The bowels were opened three times; there was no blood. On Sept. 18th the child was better and eating better. The aural discharge was less abundant. There were no fresh spots and the old ones were becoming paler. There were pains in the abdomen but none in the ears. There was no desquamation. On Sept. 20th the urine was quite clear and yellow for the first time. The left ear was still discharging. The spots were fading rapidly and some had gone entirely. The child now made an uneventful recovery, but the petechiæ were not quite gone until Oct. 10th, the day after her third birthday.

The rarity of cases of true purpura hæmorrhagica makes the case interesting. I have purposely abstained from recording it sooner in case there should have been a relapse, for relapses are said to occur frequently. It is now more than two years since the child recovered, but there has been no symptom of recurrence, neither has she had any illness whatever beyond again slight toothache two or three times. The teeth that have ached both before and since the illness have always been the same—viz., the left lower molars. It should be noted that it was on the left side that the rash was most abundant.

The difficulties in the way of treatment of such a case are apparent. The sight of the blood frightened the child; the presence of hæmatemesis interfered with giving medicine by the mouth; the restlessness of the child and her youth prevented any attempts at plugging the nares; and there was, too, the impossibility of persuading the child from pulling the plugs out had they been inserted. The serious condition of the child from loss of blood led to the adoption of injection of ergotin which, if not unique in one so young, must be nearly so; its almost miraculous arrest of the hæmorrhage justified its use. The colour of the rash in true purpura hæmorrhagica is stated to be purple when it first appears and not to become so afterwards. In the above case it seemed to vary in colour with its site, being rose-red where the skin was thin and fine and purple where it was thicker. The petechiæ all went through the colours of a fading bruise.

It is worth noticing that most of the recorded cases of purpura hæmorrhagica occur during the latter months of the year, the majority in September, October, and November, so that the season may prove to be a predisposing cause.

Leyton.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

WESTMINSTER HOSPITAL.

(Under the care of Mr. W. G. SPENCER.)

A CASE OF ACUTE PHARYNGITIS DUE TO STREPTOCOCCUS PYOGENES FOLLOWED BY SEPTICÆMIA, DEEP GLANDULAR INFLAMMATION, AND PERICARDITIS, AND RELIEVED BY THE ADMINISTRATION OF STREPTOCOCCAL ANTITOXIN.

THE value of the anti-streptococcic serum has in few cases been more strikingly shown than in that recorded below. Only discredit can result from the employment of this very powerful remedy indiscriminately in all septic cases, for it appears to be perfectly inert against other varieties of micro-organisms. We have published recently several cases in which this serum proved to be of service and others also in which but little benefit resulted. We need to be better acquainted with the capabilities and the limitations of the power of the anti-streptococcic serum and this is only possible by the publication of cases, such as the following, in which the treatment has been employed scientifically.

A man, aged twenty-one years, was first taken ill on Oct. 16th, 1898, with a sore throat which was followed by swelling in the neck. The symptoms increased in severity and he was admitted to the Westminster Hospital where he was first seen by Mr. Spencer on Oct. 24th. The patient was partly unconscious, had great difficulty and pain in swallowing, and kept placing his hand over his heart where he felt pain. The face was very pale. The temperature was 101·4° F., having been 103° during the night; the pulse was 120, small and of low tension; and the respirations were 30 and quiet. The mouth could only be partly opened; the tongue was somewhat swollen and covered with a dry brown fur. The tonsils were not enlarged; the back wall of the pharynx was covered with brown sticky mucus, but there was no sign of any membrane. The left side of the neck was much swollen, red, brawny, and œdematous. An incision had been made at the posterior border of the sterno-mastoid by Mr. Silas, the house surgeon, immediately after the patient's admission; swollen glands were reached from which a sanious fluid escaped, but no thick pus. On auscultation a loud pericardial friction rub could be heard. Dr. Blaxall, bacteriologist to the hospital, examined the mucus from the throat and the discharge from the wound in the neck. He found both in cover-glass specimens and upon cultivation mainly streptococcus pyogenes. In the cultivation from the throat a yeast, staphylococcus albus, and a few bacilli were also found. At 9.30 P.M. on the 24th—i.e., eight days after the first sign of the illness—10 c.c. of streptococcal antitoxin were injected, a second dose being given at 6 A.M. and a third at 4.20 P.M. on the 25th, and a fourth on the 26th. The effect was remarkable, the patient beginning to rally at once. On the 27th the temperature fell to 98° and did not rise above 100·8°; the pulse whilst still 120 had become much fuller and of greater tension. The patient had returned to consciousness and no longer complained of pain over the cardiac area. The pericardial friction was much less loud. The tongue was not so swollen, was moister, and showed signs of beginning to clean. Before the treatment by antitoxin there had been constipation, whilst for the next three days there were from five to eight loose motions per diem. The incision in the neck was discharging pus from deep-seated glands. On the 31st no pericardial friction could be heard, but there was a well-marked pleural rub extending from the cardiac area upwards above the third left rib. On Nov. 5th no abnormal sounds, neither pericardial nor pleural, could be heard, but an impaired resonance existed above the third left rib, which Dr. de Havilland Hall concluded to be due to pleural thickening and not to pericardial distension. This impaired resonance gradually cleared up. The patient was weak for some time, his pulse continuing to be rapid, and his temperature showing some irregularity on his first getting up. Nothing further happened except a trivial attack of urticaria caused by the antitoxin. The patient left the hospital on Dec. 14th to go to the convalescent home. The pulse and temperature were then normal and the wound in the neck had healed.

Remarks by Mr. SPENCER.—The above case is important as an instance of septic pharyngitis which would without doubt have ended fatally if the antitoxin corresponding to the organism causing the disease had not been administered. It would be useless, indeed harmful, to inject streptococcal antitoxin haphazard in any acute affection of the throat. To such treatment the identification of streptococci as the cause of the disease is an essential preliminary. In the present case beyond the organisms found there was nothing very marked in the pharynx. In other cases an acute œdematous inflammation attacks the glottis as well as the tongue and causes rapidly-increasing dyspnœa. Even if tracheotomy is performed death may occur from failure of the heart.

GENERAL HOSPITAL, BIRMINGHAM.

A CASE ILLUSTRATING A METHOD OF TREATING EXTROVERSION OF THE BLADDER IN THE FEMALE.

(Under the care of Mr. CHAVASSE.)

EXTROVERSION of the bladder has received an amount of notice quite out of proportion to the frequency of the occurrence of this deformity and this is undoubtedly to be attributed to the difficulties which are experienced in its treatment. Very many procedures have been devised to remedy this malformation and probably the most elaborate was that described by Mr. Reginald Harrison at a meeting of the Medical Society of London in 1897.[1] The method described by Mr. Chavasse is obviously only applicable to the rare cases in which the patient is a female child but it has given in this case at least good results. Tredelenburg's method, which was at first employed, is very ingenious, as are all the inventions of that eminent surgeon, but it is not always equally applicable; it is probable that it would have proved of more value in this case if the treatment had not been interrupted.

A girl, aged four years, was admitted into the General Hospital, Birmingham, in June, 1897, on account of extroversion of the bladder. The child had previously been the inmate of another hospital and from the cicatrises seen upon the abdominal wall it was evident that a plastic operation to remedy the defect had been unsuccessfully performed. The usual appearances associated with this congenital defect presented themselves. It was resolved to attempt to remedy the condition by separating the sacro-iliac symphyses as advocated by Trendelenburg. On June 11th both sacro-iliac synchondroses were separated and the innominate bones were pushed forward; iodoform gauze was used to fill in the gaps left between the bones. To maintain and to increase the approximation of the hip bones a weight-and-pulley apparatus acting crossways was applied to each buttock by means of strapping and fixed to the sides of the cot. The exposed portion of the bladder wall slipped back into the pelvis on the fifth day after the operation and at the end of a fortnight the deficiency in the abdominal wall was reduced to a slit-like aperture. The operation, however, seemed to cause a good deal of shock to the child who did not thrive well, took food badly, and developed bronchitis. The wounds consequently granulated slowly and healing was not complete till seven weeks after the operation. It was not then considered advisable to attempt any plastic operation and the child was sent to the Jaffray Suburban Hospital. Here it was deemed best by those in charge to leave off the weights and the pulleys attached to the buttocks so as to enable the child to reap the benefit of fresh air. As a result the defect in the abdominal wall speedily became more apparent and the bladder again protruded. The child's health having much improved at the beginning of December

[1] THE LANCET, April 17th, 1897, p. 1091.

she was sent back to the General Hospital and on the 6th of that month the following operation was performed.

Both ureters were catheterised and dissected clear of the mucous membrane of the bladder. Two small oblique openings were then made in the upper part of the anterior walls of the vagina into which the ends of the ureters were passed, each on its own side, and stitched to the edges of the incisions by horsehair sutures. The catheters were left in the ureters and projected beyond the labia so as to carry the urine clear of the patient. All the exposed portion of the posterior wall of the bladder was then cut away and the resulting cavity was packed with iodoform gauze. This proved successful; the right ureteral catheter came out spontaneously on the third day after the operation, the left being withdrawn on the fourth day. All the urine from this time was voided per vaginam. On Jan. 24th, 1898, Thiersch's plastic operation to close the cleft was performed, tinfoil being employed for insertion under the bridge of skin dissected up on the right side. Three weeks later as the flap was granulating healthily it was divided at its upper part and swung round and found to cover in the whole of the defect except a small portion at the left lower angle. The flap subsequently contracted somewhat, leaving an exposed portion at this angle about as large as a shilling, but as it caused no inconvenience an ordinary indiarubber female urinal was applied and the child was sent home early in April. To close in what remained of the cleft she was readmitted into the hospital on July 11th and a small flap was made on Thiersch's plan on the left side, tinfoil being again used. At the end of fourteen days the inner edges of both flaps were freshened and united. On Sept. 19th the patient was examined under chloroform; firm union was found to exist between the flaps, the urine dribbled away constantly from the orifice of the vagina, but there was no excoriation of the skin round the genital organs over the buttocks or the thighs. No enlargement of either kidney could be detected on palpation. The mother stated that the child was readily kept dry by means of the urinal during the day and at night by the use of absorbent wool the wetting of the bed was prevented. The child's health and general condition had manifestly improved, she took her food well and ran about most of the day as she liked.

Remarks by Mr. CHAVASSE.—The patient was exhibited at a meeting of the Midland Medical Society on Nov. 2nd, 1898. I then quoted some statistics of the late Mr. John Wood[1] showing that cases of ectopion vesicæ in the female were as 1 to 10 in the male and stated that this was the first time I had met with the condition in a female subject. Mr. Lawson Tait in some remarks which he made on the case said that with all his experience of women's diseases he had never before seen this malformation in a female. On referring to the experiences of others I find that the late Mr. Earle in a clinical lecture on the subject[2] said: "This is the only instance I have witnessed in a female, although I have seen several males. In looking for authorities on the subject I find only 8 recorded instances of similar malformation in females, whilst no less than 60 cases of males are related by different authorities." St. Hilaire[3] calculates that one quarter of the cases thus affected are females. Martin and Taylor[4] state that "exstrophy is usually observed in the male, very rarely in the female." No figures are, however, given. Wood's statistics may therefore be accepted as approximately correct and the malformation be regarded as comparatively rare in the female. In the present instance for more than a year the urine has been voided per vaginam apparently without discomfort to the patient, but whether as she approaches puberty the same immunity will continue remains to be seen. It is within the range of possibility that as time goes on the openings of one or both ureters into the vagina may become stenosed and that hydronephrosis or ascending pyelitis may result, but at present there is no evidence of any such complication. If one may be allowed to draw any inference from a single case my experience leads me to advocate the transplantation of the ureters into the vagina as a method of treatment to be considered in ectopion vesicæ occurring in female subjects, as the operations are readily performed and the results are so far satisfactory that they add materially to the comfort of the patient and to those who have the charge of her.

[1] Heath's Dictionary of Practical Surgery, vol. i.
[2] London Medical and Surgical Journal, vol. i., 1828.
[3] Histoire Générale et Particulière des Anomalies de l'Organisation chez l'Homme et les Animaux, Paris.
[4] American Text-book of Genito-Urinary Diseases, 1898.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Cystic Accessory Thyroid Body.—Molluscum Fibrosum associated with Neuroma.—Fracture of the Cervical Spine.—Cysts of the Suprarenal Body.—Tuberculous Cholangitis.—Multilocular Cyst in the Hernial Sac.

A MEETING of this society was held on Jan. 17th, the President, Dr. PAYNE, being in the chair.

Mr. A. E. BARKER presented specimens from a case of Cystic Accessory Thyroid Body, already reported in 1896 to the society, and which had since terminated in death. They were removed at various times after 1896 as recurrences of very slow development and of a very low order of malignancy in every other respect. The patient, a man apparently otherwise in the best of health, was operated on by Mr. Barker for the first time in October, 1889, when he was fifty years of age. The tumour was then enormous and had begun nine years before (1880) in a small nodule just above the inner end of the left clavicle. The operation and the clinical details of the growth together with the microscopical structure of the mass removed were reported in the *British Medical Journal* of June 21st, 1898. Although the patient remained in excellent health several recurrences took place and were removed between 1889 and 1896 when the operator reported the sequel to the society. Since then several other recurrences have taken place slowly and have been removed. Finally, in August, 1898, a large swelling, apparently an effusion of blood, appeared at the root of the neck pressing upon the larynx and causing fatal dyspnœa. This effusion was probably due to rupture of some of the delicate vessels in the intracystic papillary growths already described. The pathological interest of the case lies in the fact of the slow development of the tumour in the first instance lasting over nine years and its recurrence in the glands of the neck during the following nine years; finally, in its destroying life not by generalisation or cachexia but by an accidental hæmorrhage pressing upon the air passages.—Mr. BERRY said that he thought the case was unique in its long duration—eighteen years. Clinically these malignant adenomata might be regarded as semi-malignant. They were entirely different from ordinary sarcoma and carcinoma of the thyroid, cases of which usually ran their course within a year, and in one case which he had seen in three months. Such cases rarely came under the notice of the surgeon at an operable period. If the larynx, trachea, or pharynx were involved he thought the formidable operations sometimes undertaken were hardly justifiable. The question of whether a thyroid tumour was adherent to the pharynx was often very difficult to determine until the tumour was exposed during the operation. He asked what was the relation of the sterno-mastoid and of the carotid vessels to the tumour and whether there had been any implication of the recurrent laryngeal nerves.—Mr. SHATTOCK said that there were exceptions to the rule that tumours of high differentiation were of low malignancy and also to the rule of the duration of carcinomata stated by Mr. Berry. He mentioned a case which was operated on by Mr. Bryant. A tumour was removed, probably from an accessory thyroid, which proved to be a carcinoma of extremely simple structure. Glands in the neck had been removed since on two occasions but although three years had passed there had been no recurrence.—Mr. BARKER, in reply, said that the sterno-mastoid was adherent to the front and side of the growth. The vessels were directly under the tumour. The patient was hoarse so that the recurrent laryngeal nerve was probably pressed on.

Mr. T. CARWARDINE (Clifton) showed Lantern Slides and Sections from a case of Molluscum Fibrosum associated with a large Neuroma of the Outer Cord of the Brachial Plexus, and gland-like tumours, probably neuromata, in the axillæ, groins, and elsewhere. In addition to numerous molluscous nodules there were many pigmented patches in various parts of the body. There was a large tumour in the posterior triangle of the neck which inconvenienced the patient by severe shooting pains referred to the arm. The tumour was excised and proved to be a soft fibroma growing from the sheath of the outer cord of the brachial plexus. The

mother of the patient, who was a woman aged twenty-five years, also her father, and two of her brothers had a similar condition of the skin.—The PRESIDENT said that the association of molluscum fibrosum had been observed before and had formed the subject of a treatise by von Recklinghausen. He himself had shown specimens of fibrous neuromata which gave rise to intense neuralgia removed from the axillæ of a women whose skin was covered with molluscous nodules, and the association of the cutaneous tumours with extreme pigmentation of the skin had been repeatedly seen. Von Recklinghausen's statement that the tumours themselves arose from twigs of cutaneous nerves remained unproved. The skin and nerves were of similar developmental origin, and the fibrous portion of the skin might be analogous with the fibrous sheath of the nerves.—Mr. SHATTOCK said that some time ago he examined specimens to see if neuromata might be developed from the nervi nervorum; but he thought this improbable because the terminations of the latter were firm and laminated while the neuromata always had a soft and spongy formation.

Dr. H. P. POTTER showed a specimen of Fracture of the Cervical Spine from a crush the subject of which survived the injury for twenty years. At the time of his death the man was eighty-two years of age. In 1879 a wall fell on him, forcibly flexing the neck. He remained unconscious for two days and when consciousness returned there was temporary loss of power of the right arm and leg. He was kept in bed with his head fixed for four months. He made a satisfactory recovery and lived till August, 1898. In 1880, when first seen by Dr. Potter, there was a prominence at the back of the neck. The manubrium sterni and the larynx were also unduly prominent, the chin almost touching the sternum. Dr. Potter showed a vertical section through the cervical spine and cord. The cervical vertebræ were found to have been crushed together. The second, third, and fourth vertebræ were at right angles to the lower three. Owing to the compression of the bodies together the spinal cord seemed to have been little stretched. The man ultimately died from senile decay.

Dr. RAYMOND CRAWFURD exhibited a specimen of Cyst of the Suprarenal Body. The presence of an adenoma in the same suprarenal capsule suggested that the cyst might have resulted from the softening down of a second adenoma. The microscopical features both of the cyst and the adenoma confirmed this view, for on one hand the adenoma was in a very advanced state of fatty degeneration, while on the other the inner surface of the cyst wall showed a residue of suprarenal tissue also in an extreme grade of fatty degeneration. Cysts of any kind in the suprarenal capsule were extremely rare and this appeared to be almost a unique specimen of a cyst of this nature.

Dr. H. D. ROLLESTON showed sections of a Cyst of the size of a Cherry on the Right Suprarenal Body. The contents were tenacious and free from hæmorrhage. The walls of the cyst were composed of a firm fibrous capsule with some epithelial cells resembling those of the suprarenal body on its inner aspect; the rest of the suprarenal body was healthy. The cyst was probably due to softening down of a suprarenal adenoma. Such tumours derived from the cortex of the organ and composed of cells in a marked state of fatty change were not uncommon; they were surrounded by a fibrous capsule like that seen in the specimen and sometimes showed softening.

Dr. MORLEY FLETCHER showed a case of Tuberculous Cholangitis. The liver, taken from a boy, aged six years, who died from general tuberculosis, contained miliary tubercles and also numerous cavities of the size of peas with white, fibrous capsules containing bile-stained débris. Similar cavities were first described by Cruveilhier who called them biliary cavities and did not recognise their tuberculous nature. Sabourin was the first to clearly demonstrate their structure and origin. Microscopically the cavities had thick, fibrous walls with giant cells. In some the remains of the bile-duct could be demonstrated exhibiting proliferation of its epithelium. Free communication existed between tubercles in the portal spaces and the lumen of the ducts. Dr. Fletcher enumerated the various possible channels by which tubercle bacilli might reach the liver: by the hepatic artery; by the portal vein; by the lymphatics (but this with great difficulty if it ever occurred, the stream of lymph in the liver being towards the hilum, so that the infection brought to the liver would meet an opposing current); possibly by the bile-ducts; and lastly, by the umbilical vein in the fœtus. In the liver shown Dr. Fletcher regarded the small recent tubercles as due to an arterial infection. The cavities were formed as a result probably of portal infection associated with extensive ulceration of the intestines. Tubercles were formed in the portal canals and involved the bile-ducts. A secondary infection of the bile-ducts was thus brought about causing well-marked cholangitis. This was in accord with the experiments of Serjeat, Gilbert, and Claude.

Mr. H. BETHAM ROBINSON showed a Multilocular Cystic Tumour in Relation with an Inguinal Hernial Sac in a woman aged twenty-three years. The condition of the sac was only discovered at the operation for the radical cure of the hernia. The cystic swelling was in relation with the inner wall of the sac at the lower part of the canal, one cyst in particular bulging into the sac, and on puncturing a brownish fluid was set free. The whole swelling was easily dissected out of the canal with the round ligament and peritoneal sac. This seemed to be made up of a number of cysts varying in size from a walnut downwards. Such a condition was a very unusual one and the most probable explanation of its origin was that it had been derived from certain Wolffian body remnants which had descended into the inguinal canal together with the canal of Nuck, an explanation put forward for similar pedunculated but cystic processes found in a hernial sac in a male.

CLINICAL SOCIETY OF LONDON.

Clinical Meeting.—Exhibition of Cases.

A CLINICAL meeting of this society was held on Jan. 13th, the President, Mr. LANGTON, being in the chair.

Mr. J. HUTCHINSON, jun., showed a case of Localised Myositis Ossificans from Injury. The patient was a woman, aged thirty-five years, who dislocated her elbow in 1890. Six weeks later a bony thickening could be felt in front of the elbow beneath the brachial artery, in the brachialis anticus muscle, checking flexion and limiting pronation. A skiagram showed that the bony plate was not connected with the humerus and was not due to detachment of the coronoid process.

Mr. EVE showed a large, irregular Bony Plate removed from the Vastus Muscle, where it had formed at the site of a hæmatoma following a kick by a horse in the thigh. A skiagram showed the osseous growth to be separated by an interval from the femur. On cutting down and removing it it was found to consist of true bone and was therefore not an ossifying sarcoma. Mr. Eve thought that it was an example of ossification in fibrous tissue from organised blood-clot.

Dr. RAYMOND CRAWFURD showed a patient with an Enlarged Spleen with Thrill and Bruit. The patient was a man, aged about fifty years, with a typical malarial history extending over fifteen years. He had been under observation for eighteen months. A persistent thrill could be felt round about the umbilicus which was intensified by pressure, the maximum point being just inside the splenic border, with a continuous venous hum over the spleen extending into the epigastrium, with a maximum point internal to the spleen. The thrill and bruit were increased when the patient took a deep inspiration but were not affected by position. On listening over the spleen behind there was a systolic murmur which Dr. Crawfurd thought was conducted from the aorta. There was no change in the blood. Dr. Crawfurd thought that the murmur was connected with the splenic vein and that the theory which would best explain the signs was an arterio-venous communication.

Mr. H. J. CURTIS showed a patient with Anterior Displacement of a Tuberculous Carpus with formation of a False Joint, dating from 1895, the radius being most affected. The joint was scraped and the disease was checked, but the result was the formation of a false joint. Although this gave only limited movement Mr. Curtis did not think any operative interference would improve matters.—Stereoscopic skiagrams of this case were shown by Dr. MACKENZIE DAVIDSON.

Dr. J. S. RICHARDS showed a man, aged sixty-two years, suffering from Pemphigus of the Mouth, Pharynx, Larynx, and Skin. A remarkable feature was that the disease had originated in the larynx and had remained limited to that region for six months before attacking the skin. It began with a "roughness" in the throat, with cough and dysphagia, and the patient expectorated mucus tinged with blood. The mucous membrane presented numerous red patches which readily bled on being touched. After improving a recrudescence

took place in September. He was said to have passed blood by the rectum but there was no evidence of any local disease there.—Sir FELIX SEMON recalled a somewhat similar case which had been under his care many years ago and which had been brought before the Ophthalmological Society by Mr. Anderson Critchett. The patient at first had some nasal obstruction in the right nostril.

Dr. F. E. BATTEN showed a case of Progressive Muscular Atrophy of the Peroneal Type following Measles in a boy aged seven years. Three months after recovery from measles, which was followed by bronchitis and pneumonia, his mother noticed that he dragged his left foot in walking and a few months later the right foot became similarly affected. The weakness had been progressive. Six months ago he began to lose power in the hands. There was no hereditary history. There was marked wasting of the muscles of both legs below the knee. He was unable to extend or dorsi-flex the foot which tended to assume the position of equino-varus in walking; he raised the legs high to prevent the toes dragging on the ground. The knee-jerks were present and equal. Recto-vesical functions were normal. There was marked wasting of the thenar, hypothenar, and interossei muscles. There was no fibrillary tremor. Electrical reactions under chloroform showed complete absence of response to faradaism in all the affected muscles with diminished reaction to galvanism. Sensation was normal. Dr. Batten referred to other recorded cases of the kind in which, when examined, changes had been found in the peripheral nerves and in the postero-median columns of the cord. Dr. J. A. Ormerod had described cases in which the condition followed measles.—Dr. ORMEROD said that when he first suggested the possible connexion with measles Charcot had thrown doubt upon it. Although the disease was a rare one the association with measles as in his cases, in Dr. Batten's, and in others recorded by Dr. Donkin seemed to occur too frequently to be accidental.

Mr. KELLOCK showed two brothers exhibiting complete Hypospadias with Cleft Scrotum. The family consisted of seven other children, five boys and two daughters, all normal. The elder of the two patients was six and a half years old. The labour was attended by a midwife who had remarked that the genitals were much swollen. The infant was thought to be a girl and was christened as such. Six months later, however, a testicle being noticed in the right labium the child was brought up as a boy. After a miscarriage the mother had another child four years later (the second patient shown) who also presented abnormalities about the genitals. This child was christened as a girl and was being brought up as such. There was a fairly well-marked penis. The under surface was marked by a groove lined by mucous membrane. The scrotum in both cases was divided.—Similar cases were mentioned by the PRESIDENT, Mr. GODLEE, and Mr. MORGAN, and Mr. H. B. ROBINSON mentioned one in which doubt arose as to the sex in the female, owing to the penile character of the clitoris.

Dr. J. J. PERKINS showed a man, aged forty-eight years, with Progressive Muscular Atrophy of Unusual Distribution, who had malaria sixteen years ago in America. Seven years ago he had a bad fall, and four years ago he noticed a sensation of coldness with alternations of heat around the loin, followed by gradually increased weakness in the legs and occasional incontinence of urine. There was no history of lead poisoning or of syphilis. The case was unusual in that atrophy affected the trunk muscles and the glutei more than the muscles of the limbs.

Dr. J. J. PERKINS also showed a youth, sixteen years of age, suffering from General Muscular Dystrophy.

Mr. R. J. GODLEE showed two cases of Shortening and Eversion of the Thigh, with Skiagrams by Dr. Mackenzie Davidson. He said that the cases bore some resemblance to those which had been described as "coxa vara." He showed them to illustrate that exactly similar symptoms to those put down to "coxa vara" might be due to entirely different conditions. The first case was that of a boy, six years of age, who began to show signs a year ago. There was a family history of tuberculosis. He never had any pain or illness, but at the present time there was one inch shortening of the femur with rotation of the foot outward. Skiagrams showed that the shortening was in the neck of the femur, possibly due to some tuberculous mischief, but movement of the hip remained very free. The second case was that of a youth, aged eighteen years, in whom there was not only shortening and eversion, but the hip-joint was almost completely ankylosed. The only history of any injury was that he once ran against a lamp-post while playing football in the street. A skiagram here also showed that the shortening was in the neck. Mr. Godlee also showed skiagrams from a man, twenty-three years of age, who presented similar symptoms which showed no mischief in the head of the bone but the neck was almost at right angles to the bone. This might be one of the cases described as "coxa vara."—Mr. RAYMOND JONHSON observed that the term "coxa vara" described the deformity and not any particular bone disease on which it was dependent.

Mr. H. BETHAM ROBINSON showed a case of Scirrhous Carcinoma of the Parotid Gland in a man, aged sixty-five years, under his care at St. Thomas's Hospital. The tumour was first noticed some six months ago, but he had not sought advice owing to the absence of pain. The tumour in the right parotid region extended from the zygoma above to below the lower normal limit of the gland, pressing backwards on the external auditory meatus and extending forwards on the masseter as a nodular projection with a well-defined anterior margin situated in the glandula socia parotidis. The tumour extended deeply behind the jaw but did not interfere with the movement of the latter. The glands in the neck were extensively involved as far as the supra-clavicular region. There were no secondary growths elsewhere.—Mr. BARKER suggested that possibly the case might be one of senile glandular tuberculosis.

Dr. A. F. VOELCKER showed a case probably one of Cerebral Sclerosis, although there were some points suggestive of pseudo-hypertrophic paralysis. The patient was a boy, five years of age, evidently mentally deficient. He learned to walk at the usual time, but after an attack of bronchitis and convulsions at the age of two years he was unable to do so. At the present time he could only walk when supported and there was great ataxy.

Sir DYCE DUCKWORTH showed a case of Elephantiasis of One Leg. The patient was a girl, aged twenty years, a native of Yorkshire, in whom transient attacks of swelling of the left leg, commencing three years ago, had been followed by permanent enlargement. The limb up to the groin was enlarged, hard, and brawny and did not pit on pressure. She had been under treatment for ten weeks. Massage, electricity, and a liberal dietary had effected marked improvement, but the circumference of the limb was still markedly in excess of the other. As to causation of the condition she had never before been out of Yorkshire, the blood was apparently normal, and no filariæ had ever been discovered. There was no evidence of visceral disease and no signs of lymphatic involvement or of enlarged glands, but Sir Dyce Duckworth believed that the condition must be due to lymphatic obstruction.

Dr. J. J. PRINGLE showed a case of Epithelioma of the Scalp following Lupus Erythematosus. The patient was a woman, aged forty-five years, who had been under his care since 1890 for lupus affecting the occipital region and also the nose and cheeks. This yielded fairly to treatment, but in 1897 she had an epithelioma of the right parietal region which was removed by Mr. Pearce Gould. Grafts were inserted later and the wound healed quickly, but two subsequent operations were required for fresh growths and during the last few weeks a fresh epithelioma had appeared in the occipital region. Epithelioma following lupus vulgaris was not very rare, but he did not know of any recorded cases in which it had followed lupus erythematosus.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

The Prevention of Tuberculosis.

A MEETING of this society was held on Jan. 13th, Dr. GWYNN, President, being in the chair.

Dr. NEWSHOLME opened a discussion on the Prevention of Tuberculosis, with special reference to its Notification. He said that Koch's discovery of the bacillus completely changed our conceptions of the pathology and etiology of the disease and it was not long before the communicability of tuberculosis was proved by Cornet. Some diseases, as diphtheria and small-pox, were communicable to all persons alike, while others, among which, according to Kanthack, was tuberculosis, were so to a minority only. This, however, was but a question of degree, for there were families that seemed to enjoy an immunity to scarlet fever, and the

evidence of the post-mortem room was that a large proportion of persons had at one time or another recovered from attacks of tuberculosis, while one-fourth of the deaths from all causes between the ages of fifteen and forty-five years were from this disease alone. The most frequent vehicle of infection was undoubtedly the dried and pulverised sputa. The predisposing causes of tuberculous infection were: (1) the habitual inhalation of rebreathed air; (2) damp and want of light in the dwelling; (3) dusty occupations; and (4) intemperate habits. Sanitary authorities could remedy all but the last of these and in this work they would be greatly assisted by notification. Several local authorities had applied for powers to add tuberculosis to the list of notifiable diseases but the Local Government Board had always refused their requests. The chief objection to notification seemed to be the fear, as expressed by Sir Richard Thorne, that it would interfere with a man's earning his livelihood, but no one need suffer, since notification was confidential, and in this case would apply rather to the house. Under the Factory Acts rare and non-communicable diseases, as lead poisoning and arsenic poisoning, were notified, but phthisis was communicable for several years and caused 50 per cent. more deaths than all the notifiable infectious diseases together, while it was more amenable to preventive measures than most of them. In Brighton a circular was widely distributed recommending the use of damp cloths instead of sweeping, free ventilation by open windows in bedrooms, and the proper disposal of the sputa. It was unfortunate that the Local Government Board could not approve of degrees of notification or sanction payment for voluntary information. In other infectious diseases neglect to notify every case might make it impossible to trace the source of an outbreak; but the case of phthisis was different and in Brighton he had much voluntary notification for which he was nevertheless unable to pay any fee. There should be local option in this matter and it was a shame that the Local Government Board should hinder the intelligent action of local authorities in the promotion of the public health. In Brighton every death from any form of tuberculosis was made the subject of inquiry; over 100 houses per annum were thoroughly disinfected after deaths from phthisis and many more after the removal of a patient to hospital through voluntary notification. Local authorities should demand permission to pay for voluntary or to adopt compulsory notification.

Dr. J. NIVEN believed that in the north public feeling had been so roused that legislation would be welcomed. Sheffield and Blackburn were pressing for notification and much was being done by lectures, by distribution of pamphlets, and by instruction of dairymen and farmers. No injustice or hardship had followed voluntary notification wherever it had been tried, but there was a grave danger to the community in clothes made by phthisical tailors in confined rooms. Such cases could be discovered and remedied by notification, but the inspectors should be medical men and not the ordinary officials and should confine themselves to giving instructions with the consent of the medical attendant if any.

Dr. BEZLY THORNE was in favour of voluntary notification as an educational agency but believed that attempts at compulsion would rouse the middle classes to an opposition stronger than that presented to compulsory vaccination.

Dr. SYKES was doubtful of the good of notification which would by no means cover the whole of the phthisis in the country, especially among the very poor who, living in a state of chronic ill-health, did not recognise the commencement of phthisis.

Dr. HERON did not admit the practicability of notification in the present state of public opinion, being convinced that the phthisical who were able to work perhaps for years would be branded as dangerous. There were probably half a million such persons who if deprived of employment thereby would be entitled to claim support from the State. The first effect of notification would be concealment, as it had been in the case of leprosy in India. The education of the public by concerted action on the part of the medical profession, supported in every way by the authorities, and the instruction of the older children in schools of all grades in the nature and prevention of all infectious diseases, would do far more good. Notification would certainly be resented and be made a party cry in politics.

Mr. SHIRLEY MURPHY agreed on the whole with Dr. Heron that at present notification could not be enforced and that public opinion must be educated on the subject.

Sir HUGH BEEVOR attached great importance to local sanitary conditions. In the three towns, Cambridge, Dudley, and West Ham, with very different death-rates from phthisis and age incidence, he found the curves for each town identical in the two decennia 1861-70 and 1881-90.

Dr. J. GROVES, Dr. W. A. BOND, Mr. STOTT, and others having spoken, Dr. NEWSHOLME replied. In replying he denied the probability of opposition to notification as recommended by himself, for compulsory notification and payment for voluntary information would be dependent on the expressed wish of the large majority of the ratepayers and their representatives, local option being an essential condition of his proposal; and it was most unfortunate that the Local Government Board whose powers of compelling negligent authorities to do their duty he would gladly see increased should obstruct the more intelligent in their efforts for the promotion of the public health. As to the "branding" of the patient that had already been done by the present propaganda, and he knew of a clerk whose dismissal had been demanded by his fellows, but the guarantee of effectual precautions afforded by official action would rather tend to allay such alarm. The plea of concealment had been urged against the notification of diphtheria and other fevers; and there would be no interference with the liberty of the subject, the action of the authorities being limited to the sanitary conditions of the house, while no ethical difficulties had been felt in Brighton. But the question of correct diagnosis was important and facilities for bacteriological examinations were already provided in Brighton and in several northern towns—in Brighton, at any rate, without charge.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—An ordinary meeting of this society was held at Owens College, Manchester, on Dec. 16th, 1898, the President, Dr. J. W. Martin (Sheffield), being in the chair.—Dr. Donald (Manchester) showed a Myoma of the Uterus of about the size of an adult head removed by abdominal myomectomy. There was considerable difficulty in enucleating the tumour, the capsule measuring half an inch in thickness and being composed of hypertrophied uterine wall. There was very smart hæmorrhage from several vessels in the capsule.—Dr. Donald also showed a Uterus removed by Vaginal Hysterectomy after Perforation by Sounds. The cervix was being dilated preparatory to curetting; there was no resistance at any part and the sound passed easily 6 or 7 in. An examination of the abdomen showed that the point of the instrument was in the abdominal cavity. A No. 12 dilator was introduced with the same result. As it was evident that the uterine wall was perforated and as the contents of the uterus were undoubtedly septic the anterior vaginal fornix was opened up and the fundus uteri brought into view. Two large apertures which had evidently been made by the dilators were found in the fundus and the uterine tissue was so friable that vulsellum forceps very easily caused tearing. Vaginal hysterectomy was performed as the safest method of treatment. Probably the degeneration of the uterine wall was due partly to frequent child-bearing and partly to septic processes following miscarriage.—Dr. Grimsdale (Liverpool) read notes of a case of Puerperal Septicæmia treated successfully by Injections of Anti-streptococcic Serum. The woman, aged thirty-five years, had an easy labour followed by a rigor in forty-eight hours. Her medical attendant treated her energetically by washing out the uterus and curetting it, but the symptoms of high temperature, quick pulse, rapid wasting, and general serious illness persisted. On the ninth day of the disease she was admitted into the Liverpool Royal Infirmary. Streptococci having been found in the blood, serum injections (10 c.c.) were made into the flanks; after two injections the temperature (104° F.) and the pulse (120) became normal and the patient appeared to be convalescent. The injections were stopped. The temperature remained normal for twenty-four hours and then rose gradually so that in three days it was 103° and the pulse was 120. While the temperature was normal streptococci were found in the blood. After recurrence of the fever injections of the serum (10 c.c.) were given for fifteen days consecutively. The temperature was raised to 101° but gradually fell and the patient was discharged well. After admission to hospital no treatment was directed to the uterus and beyond quinine no drug was used. Urticaria and severe pains in the limbs

were complained of towards the end of the serum treatment, but these subsided in about a fortnight.—Dr. Nesfield (Manchester) thought that the treatment of puerperal septicæmia by anti-streptococcic serum seemed scarcely a natural plan, inasmuch as it was using an alternative solution of the same poison as produced the disease, and that those cases which lasted a long time usually ended in recovery under very varied plans of treatment.—Dr. Arnold Lea (Manchester) considered that since at one period the streptococci disappeared entirely from the blood and returned again in a few days a local source of infection must have been present and that this was probably in the uterus itself, since there was no evidence of local pelvic trouble. He thought that if in similar cases the serum treatment failed and the patient was losing ground removal of the uterus through the vagina would be the best treatment.—Dr. Grimsdale, in reply, stated that the streptococci were present in the blood continuously. There was no disappearance and reappearance.—Mr. Bishop (Manchester) read a note on the Vagino-Abdominal Incision *versus* Morcellation in some cases of Pelvic Surgery.

PLYMOUTH MEDICAL SOCIETY.—A clinical meeting of this society was held on Jan. 7th, Mr. M. H. Bulteel, President, being in the chair. Dr. Webber showed a case of Acute Pustular Eczema in an old Man the subject of Dupuytren's Contraction and read notes of a case of death from heart failure fifteen hours after the passage of a catheter, the patient having a subnormal temperature and a pulse of 170 a few hours before death.—Mr. Woollcombe showed (1) a case of Extensive Psoriasis; and (2) 4 members of a family who had for a number of years suffered from Polyuria (from 10 to 20 pints daily), and 2 of whom had lately developed Glycosuria. The mother had had altogether 16 children, of whom 3 were stillborn; 3 are healthy (2 girls and 1 man whose wife has had 2 miscarriages); 4 have diabetes; and 6 have died from tuberculosis. The mother and father were not tuberculous. None of those with diabetes showed any sign of tuberculosis. The specific gravity of the urine of those without sugar was 1003 and 1006 respectively, and of those with sugar 1012 and 1016, although they were passing 12 grs. of grape sugar in each ounce. No treatment had produced any effect.—Mr. F. E. Row showed a typical case of Pseudo-hypertrophic Paralysis.—Mr. C. E. Russel Rendle showed a case of Sporadic Cretinism after eighteen months' treatment with thyroid extract (10 gr. daily). The boy, aged ten and a half years, had gained a stone in weight and increased 9 in. in height during treatment.—The President showed a girl, aged thirteen years, with Irido-Choroidal Coloboma in the lower segment of the left eye.—Mr. Arthur Rendle showed a woman, aged forty-two years, who for three years had been developing symptoms of Myxœdema, the first symptom being a sudden cessation of menstruation. The patient is now improving rapidly under thyroid.—Dr. W. C. Wilson showed a number of lantern slides of x ray Photographs taken by himself.—Mr. Whiteford showed a specimen from a fatal case of Appendicitis with suggestions for treatment in cases of advanced peritonitis by withdrawing as much of the poisoned blood as the patient could stand and transfusing with saline solution, brandy, and strychnia.—Mr. Woollcombe showed, for Mr. Swain, a Multilocular Ovarian Cyst with a portion of the size of a tennis ball which had been incarcerated in the pelvis and had become densely calcareous.—Mr. Lucy showed (1) a Stomach removed post mortem from a woman, aged forty-two years, showing well-marked hour-glass constriction from cicatrising ulcers and dilatation of the proximal part to hold 5½ quarts; and (2) a Portion of Intestine about 6 in. long excised from a man the subject of inguinal hernia who was crushed. At the operation the intestine was found to be ruptured and was excised.—Mr. Bulteel showed, for Mr. Thom, a Dermoid Cyst of the Ovary with teeth of bicuspid type studded about the wall as well as other epidermal structures.—A memorial to the General Medical Council on the subject of illegal certificates of proficiency in departments of medicine, surgery, or midwifery was laid on the table and signed by a number of members.—Dr. Webber proposed, "That the Plymouth Medical Society is in accord with the aims and objects of the National Association for the Prevention of Consumption and other forms of Tuberculosis and that further steps are advisable to form a local branch of the association."—Dr. Hamilton seconded and Dr. Bushnell spoke in support.—A sub-committee was appointed to consider what steps should be taken and to report to the society.

MANCHESTER MEDICAL SOCIETY.—The annual meeting of this society was held at the rooms of the society, Owens College, on Jan. 11th, Mr. G. A. Wright, the retiring President, being in the chair. The committee in their annual report stated that the society during the past year had maintained its numbers and its activity. The roll now mustered 376. During the year 32 members had been admitted and 20 resignations had been accepted. 15 of the resignations were owing to removal from the district and the remainder were on account of inability to attend the meetings. The society had to regret the loss by death of five members—viz., Dr. W. B. Aitken, Dr. J. C. Clarke, Dr. Martin Heckscher, Mr. Edward Lund, and Dr. William Smith. Mr. Lund was elected a member of the society in 1848 and had served on the committees and in various honorary offices, having been three times president of the society. Twelve meetings in addition to the annual meetings had been held during the year, with an average attendance of 41. Two clinical meetings and two clinical demonstrations—the latter a new institution and a great success—had been held. The ordinary meetings had been held at the society's rooms and the clinical ones (by permission) at the Royal Eye Hospital, St. John-street. In accordance with the authority received from the society at a special meeting held in April, 1898, the committee had entered into negotiations with the Pathological Society, and through that society with the authorities of Owens College, whereby arrangements had been made which would enable members to obtain investigations of morbid specimens connected with tuberculosis, &c. Great good was expected to result to the members from this arrangement.—On the motion of Dr. Dixon Mann, seconded by Dr. Sinclair, the committee's report, together with the library report read by Dr. Williamson, the treasurer's report read by Dr. Glascott, and the trustees' account read by Dr. Lloyd Roberts, were adopted.—It was proposed by Dr. Prince Stallard and seconded by Dr. Hopkinson that the thanks of the society should be given to the retiring officers. Special reference was made by Dr. Prince Stallard and Dr. Hopkinson and by Dr. Dixon Mann and the chairman to the valuable service of Mr. William Coates who was now retiring from the secretaryship, which he had held to the great advantage of the society since 1894. Mr. Coates made a suitable reply and Dr. Milligan was afterwards thanked for editing the society's proceedings.—The following officers were elected for the coming year:—President: Dr. Sinclair. Vice-Presidents: Mr. Coates, Dr. Godson, Mr. Thorburn, and Dr. Wild. Treasurer: Dr. Glascott. Secretary: Dr. Reynolds. Committee: Dr. A. Brown, Dr. E. V. Brown, Dr. J. G. Clegg, Dr. Donald, Dr. Goodfellow, Dr. Harris, Dr. Hopkinson, Dr. Milligan, Mr. J. E. Platt, Dr. A. T. Wilkinson, Dr. Williamson, and Mr. A. Wilson. Library committee: Dr. Kelynack, Dr. Pomfret, and Mr. J. W. Smith. Auditors: Dr. Fenn and Dr. Lea.

EDINBURGH OBSTETRICAL SOCIETY.—A meeting of this society was held on Jan. 11th, Dr. Halliday Croom, President, occupying the chair.—Dr. Milne Murray showed (1) an Improved Belt for his Axis-traction Forceps, the moveable block running on the horizontal portion of the traction-rods being now fixed by a small lever instead of by two pinching-screws; and (2) a Fœtus with the cord fixed next the umbilicus reduced to the diameter of a whipcord. The child was born at the end of the seventh month, having evidently been retained for a month after intra-uterine death. The rhythmic uterine contractions had caused alteration of the position of the fœtus and extreme torsion of the cord after its death.—Professor A. R. Simpson showed (1) a Five Months Miscarriage from a case of Pneumonia; (2) a Specimen of Hæmatosalpinx in which no trace of conception could be found; (3) specimen from a case of Salpingo-Ovaritis; (4) considerable portion of the Vulva removed by the Knife from an elderly woman for Epithelioma; and (5) Fœtal Bones from a case of Extra-uterine Gestation; they were discharged through the abdominal walls of a woman in Sierra Leone.—Dr. Fordyce showed a Fœtus with Hydrocephalus where delivery had been effected by puncturing the head with a perforator; 33½ oz. of fluid escaped. The condition was associated with spina bifida.—Dr. J. W. Ballantyne exhibited (1) a Cervical Fibroid removed for serious Metrorrhagia; (2) a Blood Mole; (3) Secundines from a case of Central Placenta Prævia; (4) Uterine Contents from a case of Missed Abortion; (5) Photographs of a Siamese child with large Congenital Facial Tumour; (6) Photograph of a Siamese woman with Congenital Hypertrophy of the Hands

(Macrodactyly); the hands measured 13 in. long by 9 in. broad; and (7) a copy of Boaistuau's "Histoires Prodigieuses," a sixteenth-century work on monstrosities.—The President showed (1) a Dermoid Ovarian Tumour; (2) Sarcoma of both Ovaries; and (3) an Ovarian Tumour weighing 6½ st.—Dr. Ponder read a paper on Instrumental Assistance in Parturition with exhibition of a new instrument. He advocated the advisability of much greater assistance being given in all obstetric cases and showed an instrument devised to assist the dilatation of the pelvic floor. It consisted of a posterior and two lateral short blades each with a stem and a screw for fixing the latter together.—Dr. Milne Murray, Dr. Taylor, Dr. Ballantyne, Dr. Fordyce, Dr. Haultain, and others joined in the discussion and Dr. Ponder replied.

SOUTH-WEST LONDON MEDICAL SOCIETY. — A meeting of this society was held at Wandsworth on Jan. 15th, Dr. J. J. Macwhirter Dunbar, President, being in the chair.—Dr. J. B. Ball read a paper on Paroxysmal Sneezing and Allied Affections. The paper was based on the notes of 112 cases of the complaint which had come under his care. These cases afforded sufficient material for a brief sketch of the chief varieties of the complaint as well as giving indications of the etiology of the disease and showing how far the various modes of treatment which were tried were successful or otherwise. Dr. Ball laid stress on the frequency with which pathological conditions of the nose were present in all forms of paroxysmal sneezing. In his own cases some morbid condition was present in 104 out of 112 cases, or 93 per cent. The commonest condition was some deformity of the septum. Trivial deformities were not included, but only such as obstructed respiration or brought some part of the septum into close apposition with the turbinals. Other conditions present were hypertrophic rhinitis, mucous polypi, and adenoid growths. The best results were obtained from a thorough local treatment of such intra-nasal abnormalities as were present in each case. The galvano-cautery had only a limited application in these cases. The removal of mucous polypi did not cure cases unless coexisting septal deformities and hypertrophic conditions were efficiently treated. Of 31 cases which had undergone a thorough local treatment 25 were either cured or so much relieved that their symptoms gave no further trouble. Asthmatic symptoms were not relieved to the same extent as the nasal symptoms. The internal drugs found most useful were quinine, belladonna, arsenic, and iodide of potassium. The local applications most often used were cocaine, menthol, and menthol-camphor.—A discussion followed in which the President, Mr. Biggs, Mr. Ryan, Mr. T. A. I. Howell, Mr. Dickinson, and Mr. Deas took part, and a hearty vote of thanks was given to Dr. Ball.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Dec. 22nd, 1898, the President, Dr. Alfred Robinson (Rotherham), being in the chair.—A committee was appointed to report on the question of a local branch of the National Association for the Prevention of Tuberculosis.—Mr. S. Snell introduced a young man from whose Retina of the Right Eye a Piece of Metal had been extracted by the Electro-magnet. The fragment had been observed with the ophthalmoscope and the result of the removal was excellent.—Mr. Snell also showed a case of Hemianopsia and two cases of Symblepharon after treatment.—Mr. Archibald Cuff demonstrated Peculiarities of Gout and other Abnormalities in a rickety dwarf.—Dr. Arthur Hall showed cases and photographs of (1) Seborrhœic Eczema; (2) Addison's Disease; and (3) Hydroa of Pregnancy.—Dr. Sinclair White exhibited and commented on (1) a case of Moveable Hydronephrotic Kidney Cured by Nephropexy; (2) Gall-stones—Cholecystotomy with Choledochotomy; (3) Loose Cartilage Removed from the Knee-joint; (4) Traumatic Aneurysm of the Brachial Artery treated by the Method of Antyllus; (5) Spinal Meningocele treated by Excision of the Sac; and (6) Cancerous Uterus removed by Kolpo-hysterectomy.—Mr. Rupert Waterhouse showed a Brain with Cyst and Recent Blood-clot.—Mr. Waterhouse also related a case of Skin Rash following the administration of a simple enema.—Dr. Adams showed a specimen of Malignant Growth of the Œsophagus with secondary growths in the liver and related clinical and other particulars of the case.—Dr. Bardswell read a paper on Suprarenal Extract as a local anæsthetic.—The President, Dr. Keeling, Dr. Sinclair White, Mr. Godfrey Carter, Mr. Makeig Jones, and Mr. S. Snell made remarks.

BRITISH GYNÆCOLOGICAL SOCIETY.—The annual meeting of this society was held on Jan. 12th, the President, Dr. Macnaughton-Jones, being in the chair. The following officers and council were elected for the year 1899:—Hon. President: Dr. R. Barnes. President: Dr. H. Macnaughton-Jones. Vice-Presidents: Dr. G. G. Bantock, Dr. A. E. Cordes, Dr. G. Elder, Dr. R. H. Hodgson, Mr. F. Bowreman Jessett, Dr. J. Macpherson Lawrie, Dr. J. J. Macan, Dr. R. Milne Murray, Dr. R. D. Purefoy, Dr. F. F. Schacht, Dr. W. Travers, and Professor Hector Treub. Treasurer: Dr. J. A. Mansell Moullin. Council: Mr. W. Armstrong, Dr. N. Whitelaw Bourns, Professor Murdoch Cameron, Dr. John Campbell, Mr. G. Roe Carter, Dr. A. Donald, Dr. T. Eastes, Dr. F. Edge, Dr. C. H. Gage-Brown, Mr. H. Bellamy Gardner, Dr. C. Godson, Dr. H. S. Howell, Mr. J. Furneaux Jordan, Dr. Skene Keith, Dr. Christopher Martin, Dr. T. Morton, Dr. W. H. Newnham, Mr. A. W. Mayo Robson, Dr. C. H. F. Routh, Dr. W. Slimon, Mr. E. T. Smith, Dr. Heywood Smith, Dr. R. T. Smith, and Dr. D. Thomson. Editors of Journal: Dr. F. F. Schacht, Dr. Arthur E. Giles, and Dr. J. J. Macan. Hon. secretaries: Dr. George E. Keith and Dr. Arthur E. Giles.—The President gave his annual address on Gynæcological Lessons of the Past Year.—A conversazione followed at which some 150 Fellows and visitors were present. Recitations were given by Mr. Mel B. Spurr and selections of vocal music by the Misses and Mr. Isidor de Solla.—Some new and interesting Gynæcological Instruments were shown by the President, including Dr. Kolischer's operating cystoscope, Dr. Doyen's *lever pince* for producing hæmostasis by pressure and crushing in vaginal and abdominal hysterectomy, Professor Schauta's ligature tightener, and various gynæcological appliances.

LIVERPOOL MEDICAL INSTITUTION. — At the annual meeting of this society held on Jan. 12th the following office-bearers and members of council and committees were elected:—President: Dr. W. Macfie Campbell. Vice-Presidents: Dr. R. S. Archer, Dr. H. Harvey, Dr. A. Bernard, and Dr. T. B. Grimsdale. Honorary treasurer: Dr. James Armstrong. Honorary general secretary: Dr. J. M. Hunt. Honorary secretary to ordinary meetings: Mr. W. Thelwall Thomas. Honorary librarian: Dr. W. Permewan. Council: Dr. F. H. Barendt, Mr. E. A. Browne, Dr. R. Caton, Dr. F. Johnston, Dr. Leslie Roberts, Dr. Arthur Wallace, Dr. William Alexander, Mr. R. A. Bickersteth, Mr. T. M. Dawson, Dr. J. C. Davey, Mr. A. Burns Gemmell, and Dr. J. J. O'Hagan. Auditors: Dr. H. Harvey and Dr. C. J. Macalister. Pathological and microscopical committee: Dr. J. H. Abram, Dr. F. H. Barendt, Mr. R. A. Bickersteth, Professor Boyce, Dr. A. W. Campbell, Mr. F. C. Larkin, Dr. C. J. Macalister, Mr. G. P. Newbolt, Mr. F. T. Paul, and Professor Sherrington. Journal committee: Honorary secretary ordinary meetings, honorary secretary pathological section, Mr. F. T. Paul, Dr. F. H. Barendt, Dr. T. B. Grimsdale, Mr. C. G. Lee, Dr. C. J. Macalister, Mr. G. P. Newbolt, and Dr. W. Permewan.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—The fourth meeting of the session of this society was held in the Medical Library of University College on Jan. 11th, Dr. Roxburgh being in the chair. Mr. C. E. S. Flemming showed a microscopic section of Angeio-Sarcoma and Mr. Williams commented on the pathology of the subject.—Dr. Waldo read a paper on the Treatment of Hæmorrhoids.—Mr. Munro Smith, Dr. Aust Lawrence, Mr. C. E. S. Flemming, Mr. Ewens, Dr. A. J. Harrison, Dr. P. W. Williams, Mr. Carwardine, and Dr. Elliott spoke on the subject.—Dr. Aust Lawrence read a paper on the Immediate Repair of the Perineum when Lacerated in Labour.—Dr. J. L. Firth, Dr. Newnham, and Dr. W. C. Swayne discussed the paper.—Dr. J. L. Firth read a paper on a case of Primary Sarcoma of the Thyroid treated by Thyroidectomy.—Mr. Harsant, Mr. R. Williams, Dr. Stack, Dr. Waldo, Mr. C. A. Morton, and Mr. Paul Bush commented on the case.—Dr. W. H. Newnham read a paper on a Successful Case of Intraperitoneal Hysterectomy.—Dr. Aust Lawrence, Mr. Williams, Mr. Morton, Dr. W. C. Swayne, and Mr. Carwardine discussed the subject.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.—At a stated business meeting of the College held on Jan. 13th the following candidates were admitted Members of the College: Alexander Charles O'Sullivan and George John Peacocke.

Reviews and Notices of Books.

A System of Practical Medicine. By American Authors. Edited by ALFRED LEE LOOMIS, M.D., LL.D., and WILLIAM GILMAN THOMPSON, M.D. Vol. IV. London: H. Kimpton. 1898. Pp. 1105. Price 25*s*.

THIS is the concluding volume of an excellent work which, without being exhaustive, may well claim to present a thoroughly sound survey of modern medicine. This volume is mainly devoted to Diseases of the Nervous System, but it also contains towards its close a few articles on certain Constitutional Diseases, mostly from the pen of one of the editors, Dr. Thompson, which rather suggests their unintentional exclusion from an earlier section. The number of contributors to the volume is large, the first article, by Dr. F. G. Finley, being upon Diseases of the Peripheral Nerves and presenting within comparatively narrow limits a lucid account of conditions of which the pathology and symptomatology are somewhat recent acquisitions. Dr. Allen Starr opens the part dealing with Diseases of the Spinal Cord with an article upon their diagnosis and localisation. In an interesting manner he explains the various motor, sensory, and trophic phenomena of lesions of the cord by reference to physiology and pathology illustrated by numerous excellent engravings. The same writer contributes an article on Anterior Poliomyelitis. He draws attention to the occasional prevalence of this affection in epidemics, citing several recorded instances, and infers from this, as well as from other facts in its etiology, that the disease is one which may be caused by specific toxins. The symptoms and progress of the affection are well described and its association with polyneuritis is suggested in cases where pain markedly predominates in the early stages.

Dr. E. Fisher writes upon Acute and Chronic Myelitis, as well as upon Landry's Paralysis, upon the pathology of which latter condition no new light is thrown. The prevailing opinion at present is that it depends upon some toxic agency which attacks both centre and periphery of the spinal system. Dr. D. D. Stewart discusses the Scleroses. He dwells at some length upon the syphilitic factor in the etiology of tabes dorsalis, enumerating various authorities and expressing concurrence in the view that syphilis is an almost necessary precursor to the sclerotic change. The clinical history of tabes is fully told, whilst in regard to treatment the author speaks more hopefully than do many upon the benefit to be derived from suspension when properly carried out. Articles upon Affections of the Meninges, as well as upon certain Diseases of the Cord, including syringomyelia, are contributed by Dr. C. A. Herter, who also writes upon Diseases of the Medulla and Pons.

The subject of Cerebral Localisation, including a discussion of Aphasia, is treated by Dr. J. T. Eskridge in the opening article on Diseases of the Brain. There is one slight redundancy in the ensuing pages, and that is in the description of thrombosis of the cerebral sinuses, which is first described by Dr. F. T. Miles in his account of Diseases of the Meninges, and again by Dr. F. X. Dercum in his article on Diseases of the Blood-vessels of the Brain. This latter article is a very interesting one, comprising of course the important subjects of Hæmorrhage, Embolism, and Thrombosis. The Cerebral Palsies of Infancy are well described by Dr. E. D. Fisher who devotes much attention to the question of differential diagnosis. Many important subjects have been assigned to the capable pen of Dr. Eskridge, including multiple sclerosis, abscess of the brain, and tumours. The articles strike us as being carefully prepared, and that on Cerebral Tumours should be of much value to the pathologist as well as to the clinical observer. It is hardly possible to single out for especial note any one of the numerous articles upon Functional Nervous Disorders. That on Epilepsy is written by Dr. F. Peterson; those on Chorea and on Tetany by Dr. C. L. Dana; and those on Neuralgia and on Migraine by Dr. W. H. Thomson. That modern disease, Neurasthenia, so difficult to define and no less difficult to describe, is dealt with in some detail by Dr. James. P. Putnam. It is clear that this varied affection comprises what used to be called "hypochondriasis," whilst in another direction it trenches on the ill-defined province of hysteria. Nevertheless it is a condition which deserves separate treatment, for it is constantly brought under the notice of the physician. "Occupation Neuroses" are described by Dr. C. K. Mills and "Traumatic Neuroses" by Dr. Morton Prince who clearly demonstrates the prominent part played by the "psychical factor" in many a neurotic state ascribed to injury. Dr. Prince dwells upon these conditions at some length and from their prevalence, as with that of neurasthenia, it must be inferred that the nervous sensibility or instability of mankind is on the increase. Paralysis agitans, an affection which still lacks a definite pathology, is described by Dr. F. Peterson, whose researches point to the most frequent causal factors being mental strain, traumatism, and physical illness. Hysteria is discussed with full appreciation of its multifarious manifestations by Dr. Wharton Sinkler and is followed by an interesting article on Disorders of Sleep, in which the subjects of hypnotism, insomnia, somnambulism, dreams, trance, and catalepsy are discussed in turn. Lastly, under the heading of Vaso-motor and Trophic Disorders will be found accounts of acromegaly, Reynaud's disease, and scleroderma, by Dr. James Stewart. A valuable addition to a work of this class is formed by the articles upon Disorders of the Mind. Dr. W. B. Pritchard gives a very clear and reasonable account of Melancholia, whilst Dr. W. E. Ford writes upon Mania. The following extract exemplifies the author's argument as to the evil of continuous mental anxiety. He says (p. 784):—

"Some years ago I collected the statistics regarding the lives of stockbrokers in a certain city and was surprised to find that nearly every person who lived a sober life and continuously studied the ups and downs of the money market failed either mentally or physically in a short time—less than a dozen years—ultimately disappearing from active life. On the other hand, the men who were operators of great skill and coolness and who lived regularly most of the time, but occasionally gave way to the drink habit and disappeared several days at a time on account of helpless drunkenness, lived longer and had fewer mental disorders. This, of course, cannot be construed into an argument in favour of drinking even occasionally, but was to my mind a very strong indication of the benefit coming from the occasional complete relaxation from intense mental anxiety. Frequent vacations passed in the woods or at the seaside without social duties and where temporarily men could resort as nearly as possible to primitive life, even for short periods, would, I am convinced, be much better. Protracted anxiety without rest breaks more men than does hard intellectual effort."

These are sensible remarks and should be borne in mind by all who test the breaking strain of the fine cerebral mechanism with which they are endowed. The subject of Dementia is treated by Dr. W. B. Pritchard; that of Paranoia by Dr. Noyes; General Paresis by Dr. L. C. Gray; and Idiocy and Imbecility by Dr. Pearn Finlay. Sexual Psychoses is the title of a study of subjects which have been lately given much prominence but with little profit, and it is carefully handled by Dr. Morton Prince. The volume concludes with articles on Rheumatism, Gout, Scurvy, and other subjects written by Dr. Gilman Thompson.

Chemistry in Daily Life. By Dr. LASSAR-COHN. Translated by M. M. PATTISON MUIR, M.A. Second edition, revised and augmented. London: H. Grevel and Co. 1899. Pp. 328. Price 5*s*.

WE are glad to see that a demand has arisen for a second edition of this popular exposition of a subject about which, as the translator says in his preface, there are "vague notions circulating in many men's minds." The first edition was reviewed in THE LANCET of Oct. 3rd, 1896, when we welcomed the work as amongst the first appearing in English to point out in a popular and intelligible way the application of chemistry in daily life. The book contains in reality twelve lectures which were delivered by the author to a society in Königsberg organised on the lines of the celebrated Humboldt Academy of Berlin. The ground covered is remarkable and an evidence, as the translator points out, that chemical phenomena are intimately bound up with our daily lives and that whether we are conscious of it or not we are constantly carrying on chemical operations. The present edition is quite up to date, references being made to the recent discovery of krypton, metargon, and neon as constituents of the atmosphere by Professor Ramsay and Dr. Travers. We observe no reference in the chapter on the Potter's Art and especially in the section dealing with Lead Glazes to the injury which this industry is said to cause to the people engaged in it. There is no reference to leadless glazes although we believe German manufacturers have taken a line of action in this direction which should have an important bearing upon the legislation of the subject now proceeding in our own country. Those who would acquire a sound acquaintance of the application of chemistry to the arts and manufactures could not read a better book and it will be intelligibly read by those who know little of chemistry, all technicalities being as far as possible avoided.

Practical Diagnosis: the Use of Symptoms in the Diagnosis of Disease. By H. A. HARE, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia, Physician to the Jefferson Medical College Hospital, &c. Third edition. 204 Engravings and 13 coloured Plates. London: Henry Kimpton. 1899. Pp. 624.

NO more practical evidence of the success of a medica work is required than the publication of three large editions in the course of two years. The medical student is naturally perplexed at the number of new terms of methods of physical examination with which he is confronted when fresh from his anatomy and physiology he commences the study of disease as occurring in his fellow creatures. In order to ascertain the meaning of the signs and symptoms he has to hunt through the pages of the ordinary text-book and frequently through his want of knowledge his search is unsuccessful. In Dr. Hare's book, however, he can at once find what he requires. This volume cannot, of course, replace a text-book of medicine, but it is a most valuable adjunct to it. Returning from the out-patient rooms or the wards the student on referring to it can at once refresh and amplify knowledge which he has gained from the physician. This edition has been fully brought up to date.

There is so much that is excellent in the work that it is difficult to select any special chapters. We believe, however, that Dr. Hare is at his best in describing and discussing the physical signs and symptoms connected with the nervous system.

The book is divided into two divisions. Part I. deals with the Manifestation of Disease in Organs and Part II. with the Manifestation of Disease by Symptoms. The remarks on the conclusions which may be arrived at from an examination of the hands, arms, feet, and legs are particularly interesting and some well-executed illustrations considerably enhance the value of the text. The chapter on the skin, too, contains much useful information, especially in regard to sensation, the distribution of the nervous supply being fully and explicitly given.

The examination of the chest is also lucidly described; the knowledge to be derived by inspection, percussion, auscultation, &c., is fully detailed. It seems strange that so much confusion exists as to the nomenclature of physical signs when applied to the lungs. Physicians differ so much as to what is meant by tubular, bronchial, cavernous, broncho-vesicular, and harsh breathing that the student becomes hopelessly mixed in his ideas of morbid breath-sounds. Dr. Hare directs him to listen over regions of the chest where such sounds are normal, but this does not extricate him from the medley of terms. In such a carefully considered chapter we are surprised to find no caution expressed as to the nature of the breath-sounds which may be heard over the apex of the upper lobe of the right lung. The variety of breath sounds which may be heard over this region in healthy subjects is great and frequent errors result, as the principal medical advisers of assurance offices are aware; and perhaps the most frequent mistake made by students is to diagnose a "cavity at the right apex" when the lungs are perfectly healthy.

The second part of the work contains information of a character which is usually only found scattered through text-books dealing with special subjects, such as Chills, Fever and Subnormal Temperatures; Headache and Vertigo; Pain; Tendon Reflexes and Muscle tone, &c.

The work as a whole we consider a most useful one, ably carried out. It is one useful equally to the practitioner and student and no doubt many further editions will be called for.

A Treatise on "Unripe Cataract." By WILLIAM A. MCKEOWN, M.D., M.Ch. R.U.I., Surgeon to the Ulster Eye, Ear, and Throat Hospital, Belfast; Lecturer on Ophthalmology and Otology, Queen's College, Belfast. Illustrated by 9 Plates containing 60 original Drawings. London: H. K. Lewis. Pp. 202. 8vo. Price 12*s*. 6*d*. net.

THIS is a fairly complete treatise on cataract written by a surgeon who has had large experience and whose opinions are consequently worthy of consideration. Dr. McKeown commences by giving a classification of the various forms of cataract and their diagnosis followed by a chapter (which seems somewhat out of place) on the removal of cortex. He then describes the preparation for operation which should surely precede the former since the rules that are applicable to the removal of cortex are the same as those for extraction of the lens. A chapter is devoted to a detailed description of apparatus for injection and irrigation and the mode in which they should be employed. The various operations for cataract are next considered, with the post-operative incidents and treatment. Lastly, there are statistics giving an account of 155 cases which have been under his care. The main objects of the work appear to be to introduce greater precision into the clinical diagnosis of the different forms of cataract, the treatment by operation of incomplete cortical cataract, and the employment of irrigation in the extraction of cataract performed with iridectomy for the removal of the remains of cortical substance. Dr. McKeown's nomenclature and classification of cataracts does not appear to present any novelty, but much interest attaches to his method of dealing with the cortex. He describes 6 methods. 2 of these are preliminary—that is, are practised some time anterior to the extraction of the lens; 1 is practised at the time of the extraction, but before the expulsion of the body of the lens; and the 3 others are available after the expulsion of the lens. The preliminary operations are needling and Foster's artificial maturation, to which last he is opposed. The third, of which

he speaks in terms of approval, consists in the introduction of a liquid by a fine hollow needle immediately before the stage of capsulotomy. The effects of this, he says, are that it renders transparent substance opaque, it breaks up striated flaky mother-of-pearl cortex, and it separates cortical substances from the capsule and may even wash out more or less of it. The liquid he recommends to be used is sterilised normal saline solution. Of the methods applicable after expulsion of the body of the lens the first is pressure and friction on the outer surface of the lids or on the eye itself either by the spoon or finger, the scooping out with a scoop introduced into the eye, and, lastly, the force and disintegrating action of liquid introduced into the eye. The advantages which Dr. McKeown claims for this last method, combined on occasion with the other proceedings, are that it presses the posterior capsule of the lens backwards, usually causes the cut and torn edges of the capsule to come forwards and reaching every part of the interior of the capsule searches every corner for cortical remains, whether large or small, concealed or exposed, opaque or transparent. In his hands the method of irrigation appears to have answered well, but a very much larger body of evidence will have to be accumulated before some at least of the more conservative operators will be induced to believe it to be safer and better than the simple corneal section and free division of the capsule with the cystitome iridectomy, unless unavoidable, being omitted. It is impossible to prevent the formation of secondary cataract by any means except by the removal of the lens within its capsule which is in most instances impracticable and is attended with dangers of its own.

JOURNALS AND REVIEWS.

The Journal of Anatomy and Physiology. Conducted by Sir WM. TURNER, F.R.S., D. J. CUNNINGHAM, M.D. Edin., F.R.S., A. MACALISTER, M.D. Cantab., F.R.S., and J. G. MCKENDRICK, M.D. Aberd., F.R.S. Vol. XXXIII. Part II. January, 1899. London: Charles Griffin and Co.—The contents of this number are as follows:—1. The Convolutions of the Cerebrum of the Horse, a much needed monograph, by Mr. O. Charnock Bradley, Lecturer on Anatomy, New Veterinary College, Edinburgh. 2. On the Eyelid Muscles of the Carchariidæ and Scyllium: A contribution to the morphology of the nictitating membrane of sharks, by Dr. W. G. Ridewood, F.Z.S., Lecturer on Biology at St. Mary's Hospital Medical School. 3. The Penetration of the Muscular Fibres of the Human Heart by Capillaries and the Existence in that Organ of very large Capillaries, by Dr. Arthur V. Meigs, physician to the Pennsylvania Hospital, with a plate. 4. Observations on the Shape of the Solid Abdominal Organs, by Dr. David Hepburn, F.R.S. Edin. 5. The Lateral Thoracic Branch of the Internal Mammary Artery, by the same author. 6. Example of a Large Opening between the Two Auricles of the Heart, unconnected with the Fossa Ovalis, by T. Wardrop Griffith, Profesor of Anatomy, Yorkshire College, Leeds. 7. On an Atypical Case of "Strong" Current in Pflüger's Law, by David Fraser Harris, M.D. Glasg., F.R.S.E. 8. Variations in the Human Tooth-form as met with in Isolated Teeth, by A. E. Taylor, B.A. Downing College. 9. Abstract of Remarks on the Brain Cast of Pithecanthropus Erectus, by M. Eugène Dubois, read at a meeting of the Fourth International Congress of Zoology held at Cambridge in August, 1898. 10. On the Condition known as "Epignathus," by Bertram C. A. Windle, D.Sc., Professor of Anatomy at Mason University College, Birmingham. 11. On the Range of Applicability of Certain Modifications of the Weigert-Pal Process, by Joseph Shaw Bolton, M.D. Lond., with 5 plates. 12. An Osteometric Index Calculator by David Waterston, M.B. Edin., Demonstrator of Anatomy, Edinburgh University. An ingeniously constructed instrument. 13. Note on the Ovarian Ova of the Hedgehog, by E. Wace Carlier, M.D. Edin., Lecturer on Experimental Physiology and Histology in the University of Edinburgh. 14. Further Observations on the Anatomy of the Brain in the Monotremata, by G. Elliot Smith, B.A. Cantab., with 3 plates. 15. Archæologica Anatomica: the Veins of the Forearm. 16. Anatomical Notes and Queries. 17. The Proceedings of the Anatomical Society of Great Britain and Ireland.

Edinburgh Medical Journal.—The opening article of the January number is the commencement of an article entitled "The Evolution of Life; A Scheme of Pathology," by Dr. R. Maguire of St. Mary's Hospital. The Morison Lectures on the Nervous System and Disorder of the Viscera, by Dr. A. Morison, are continued, but readers of THE LANCET have already had an opportunity of perusing them. Dr. W. B. Ransom of Nottingham writes on the Vis Medicatrix Naturæ. Dr. H. Ashby of Manchester utters a warning against large doses of chlorate of potash, a drug which may produce chronic anæmia with enlarged spleen. Altogether there are seven original communications.

Scottish Medical and Surgical Journal.—The January number begins with a paper by Dr. Joseph Bell (Edinburgh) on Six Cases of Abdominal Abscess Treated by Incision and Drainage. Dr. D. Noel Paton (Edinburgh) writes on Constructive Changes in the Animal Tissues, his investigations having been made on the ovaries of the salmon. He comes to the conclusion that in the animal body synthetic changes occur to a very large extent—that the essential constituents of the body are not taken directly from plants but are elaborated from simpler substances. Dr. W. Ford Robertson, pathologist to the Scottish asylums, has an interesting paper on a New Black Stain for the Central Nervous System. The tissue is kept for more than a month in a fluid made by the addition of 5 per cent. of formalin to a 1 per cent. solution of platinum bichloride.

Bristol Medico-Chirurgical Journal.—The last of the original articles in the December number is a recommendation by Dr. W. Macphun Semple that sphygmograms should in some cases be taken not on the usual opaque glazed paper, but on smoked tracing-paper, so that reversed copies may be multiplied photographically either on ordinary sensitised silver paper, or on ferro-prussiate paper, or on bromide paper.

Mercy and Truth.—In one of the articles of the January number Mr. Arthur Neve mentions three cataract extractions performed under difficulties in a mountain village in Kashmir.

LONDON THROAT HOSPITAL.—A dramatic performance in aid of the London Throat Hospital, Great Portland-street, W., will take place at St. George's Hall, Langham-place, on Tuesday, Jan. 31st, at 8.30 P.M. The piece will be *Sunlight and Shadow*, a comedy in three acts by R. C. Carton. Characters will be taken by Mr. Auckland Branwell, Mr. G. A. Calder, Mr. H. J. Martin, Captain Claude Wilkieson, Hon. Stephen Powys, Mrs. Chas. Sim, and Miss Florence Tanner. Tickets may be obtained from the secretary at the hospital and from the following ladies:—The Hon. Florence Colborne, 16, Hans-place; Mrs. Knocker, Sidcup; Mrs. Law, 35, Harley-street; Mrs. Potter, 27, New Cavendish-street; Mrs. Robinson, Brockley; Mrs. Sim, 69, St. Ermin's Mansions, Westminster; Mrs. Stewart, Orpington; Mrs. Stibbard, 22, Stanhope-gardens, Queen's-gate; Mrs. Stoker, 14, Hertford-street; Mrs. Waggett, 45, Upper Brook-street; Mrs. Whistler, 6B, Bickenhall Mansions, Gloucester-place; Mrs. Wilkin, 40, Devonshire-street; Mrs. Woakes, 78, Harley-street; and Mrs. Woakes, 7J, Bickenhall Mansions, Gloucester-place.

THE LANCET.

LONDON: SATURDAY, JANUARY 21, 1899.

THE case of JULIAN ROWLAND, *alias* EDWARD JOSEPH NUGENT, found guilty at the Central Criminal Court of the manslaughter of JANE ELIZABETH SMITH, and also of committing perjury in the evidence given by him at the inquest touching the cause of her death, involves much that is of interest to the medical profession. The facts are well known to all readers of the daily newspapers, having been fully reported in the various stages of a protracted case. The poor woman died from the effects of an inversion of the uterus which remained undetected till it was too late to save her life by reduction. The occurrence of inversion is one of the rarest accidents in obstetric practice. LUSK says, quoting BRAUN, that of 250,000 births in the clinics respectively under the charge of SPAETH and himself not a single complete inversion had come to their notice and that there was but one instance in 190,000 confinements at the Rotunda in Dublin. Apart from its rarity the remarkable thing in the case now under notice is that the accident was not ascertained till the exhaustion of the patient from shock and hæmorrhage had proceeded too far for her recovery. It was her second confinement and the labour seems to have been quite natural. ROWLAND, an unqualified practitioner (personating, as we shall immediately see, EDWARD JOSEPH NUGENT, said to be in Australia), was annoyed at being sent for at 11.30 P.M. by the nurse. But the nurse with a very proper sense of her responsibilities insisted on his staying and the child, a perfectly healthy baby, was born without trouble of any kind at 12 o'clock. Soon after the birth and, according to the view of the prosecution, in consequence of the negligence of ROWLAND, grave symptoms appeared—great pain in the back, the colour of the face became waxen and yellow, the lips were clenched, and the eyes were staring. ROWLAND made light of these symptoms, which greatly impressed the nurse, and said, according to the nurse's evidence, that women in Mrs. SMITH'S condition "would be like that for a bit." And, faithful to the view that whatever was happening was normal, he made no examination but went away! The indications of shock getting worse he was sent for again and reluctantly came, to find on examination the inversion which doubtless existed before he left. He requested further assistance, and Mr. R. J. CAREY was summoned by whom the inversion was soon reduced. ROWLAND stayed with the patient till she died and then gave a certificate of death from hæmorrhage and exhaustion, signing himself "E. J. NUGENT, Licentiate of the Royal College of Surgeons, Ireland." But for the fact that the husband, coming to know of the irregularities of the case, decided to communicate with the police the conviction of ROWLAND on the double indictment would not apparently have taken place.

In the trial for manslaughter some attempts at a defence were made. The view that the case was one of spontaneous inversion of the uterus was put forward, and a number of witnesses were said to be ready to testify to the skill of ROWLAND; but on the judge intimating that these circumstances would not help the prisoner, Mr. PERCIVAL HUGHES, the counsel for the defence, did not call the evidence, and the jury found a verdict of "Guilty." Then came the indictment charging him with perjury in the evidence given at the inquest on the case; and here the proof of guilt was overwhelming. Mr. GILL for the Crown had no difficulty in showing that ROWLAND had represented himself as a duly qualified medical man, a Licentiate of the Royal College of Physicians and of the Royal College of Surgeons of Ireland. At the inquest he had sworn that his name was NUGENT, not ROWLAND. For the elucidation of this part of the case the public is much indebted to the Medical Defence Union which body through the coroner at the inquest succeeded in starting an investigation into the history and identity of the prisoner. ROWLAND'S statements as to his employments by various shipping companies were found to be as absolutely false as his claim to the name of NUGENT and to the proprietorship of NUGENT'S diplomas, though unfortunately it appears to be proved that before NUGENT went abroad he consented to give ROWLAND his diplomas in consideration of an allowance to his wife, who did not accompany him, of 3*s*. 6*d*. a week. This system of fraud and personation has been going on for years. Previously to the time of NUGENT'S going abroad ROWLAND was an assistant to practitioners at Woolwich; after this he took NUGENT'S name and practised at Barking-road where the case happened which has brought his sins to light.

The facts of widest professional and public interest in this case are that it should be possible for a man to practise for years such fraud without exposure and that whe the exposure does come it comes through one of the non-official societies of the profession and not from any of its official bodies, either the medical corporation whose diploma was being abused or the General Medical Council. It has been known for some time that the methods of the General Medical Council for protecting the public from such imposture as is revealed in this case are not satisfactory, and only a year or so ago a police-court investigation revealed the ease with which such tricks of impersonation can be carried out. At the last meeting of the Council a resolution was adopted *in camerâ* to the following effect:—

"That the Executive Committee be instructed to report upon means to secure the identification of registered medical and dental practitioners and to prevent fraudulent personation of such practitioners."

A tardy step is therefore to be taken. Such revelations as those which have just been made in the case of ROWLAND must make the public and the profession very uneasy as to the extent to which personation may be carried on both at home and in the colonies and dependencies of the empire. We particularly draw attention to the XIVth Section of the Medical Act, 1858, under which the Registrar, in accordance with his duty to keep the Register correct, can remove from the official roll the names of persons who do not reply within six months to a communication from the General

Medical Council directed to their registered addresses. The restoration of names to the Medical Register after such removals is evidently open to great abuse unless evidence as to identification is made much more stringent than we have any evidence of its being, and the public will look narrowly to the report of the Executive Committee insisting on a much more careful and critical use of this section than has been the practice of the Council hitherto.

FOR the past year and more our columns have borne frequent testimony to the great attention now being given to the treatment of phthisis by the "fresh air" or "hygienic" plan. The impulse of the new movement has come from Germany where Dr. BREHMER of Görbersdorf, Dr. DETTWEILER of Falkenstein, Dr. WALTHER of Nordrach, and others have gradually familiarised the minds of the profession with the spirit and methods of the new therapeusis. Controversies as to priority of idea and suggestion are generally invidious and seldom profitable, but we could, if necessary, make out a good case for attributing the original inspiration of this movement to the teaching of British physicians. That teaching, however, remained more or less a "pious opinion" until it was translated into successful practice by the vigour and perseverance of our contemporary fellow workers in Germany. All honour to them, for there can be little doubt that they have initiated a movement fraught with great potentialities of good to a class of sufferers whom the older methods of treatment too often failed to benefit. We approach the subject partly to indicate our sympathy with the workers in this field, partly to sound a note of warning lest by any errors in questions of detail the new procedure should be robbed of a portion of its usefulness.

The "hygienic" treatment of phthisis starts with two great initial advantages—first, the comparative failure of other methods; and secondly, its simplicity and, up to a certain point at least, its demonstrable utility. We need not recall the story of tuberculin or attempt to appraise the value of the "new" tuberculin. With the brilliant success of antitoxin in diphtheria in mind it would be rash to say that the labours of Professor KOCH to find a remedy for tuberculosis are either misdirected or predestined to complete sterility. They may be fruitful hereafter, but for the present the attitude of the medical profession in this country is simply one of observation and expectancy. It will require strong evidence to bring tuberculin or any similar remedy into repute in the treatment of phthisis. Nor do we undervalue the treatment which has been the normal practice in recent years in this country. The leading features of this treatment have been and are a generally tonic and analeptic method, much attention to nutrition, rest, and exercise, the use of cod-liver oil, creasote, guaiacol, or other such drugs, and when practicable a judicious change of climate. The above procedure, coupled with the careful management of symptoms, has had a considerable measure of success, but it left much to be desired. It failed to arrest the disease in a large proportion of cases and one of its essential features—viz., change of climate—must always be out of the reach of the great majority of sufferers. What is wanted in phthisis, we need hardly say, is some treatment which can be applied at home, which can be brought within the reach of all classes, and which is capable of easy application. How far the new method fulfils these indications time will show, but it has at least the merit of attempting to fulfil them. This method has been so often and so recently described in our columns that we need only very briefly recall its leading features which are characterised by an extreme simplicity. Practically they amount to this—the patient lives continuously in the fresh air, his nutrition is sedulously maintained at the highest point, and all available means are employed to "harden" the constitution and render it impervious to the influence of the tubercle bacillus. The "Brehmer-Dettweiler method"—as it is known in Germany—simply consists in carefully working out these elementary principles to their logical conclusions.

A few points suggest themselves for comment and criticism. It is easy to say "the patient must live continuously in the fresh air," but how is this to be secured, especially if the climate should be changeable, wet, or foggy? At the German sanatoria the patients spend their days either in exercise or resting upon protected balconies or in specially constructed shelters, and the internal arrangements of these institutions are such that even at night the patient breathes air of almost unimpaired purity. It is clear that similar methods could be applied in sanatoria in this country and the experiment is now being tried in various localities. We would, however, deprecate the views recently adopted by some British authorities that climatic conditions have no influence and that the same results will follow the "hygienic" plan in England, Scotland, or Ireland as can be obtained in some of the most favoured foreign resorts. To take up this position is, we fear, likely to cover the new movement with ridicule. We cannot seriously doubt that phthisical patients—speaking generally—require a sunny, fairly dry, and distinctly tonic climate and that there is a most important difference between fresh air which is sun-warmed, dry, and free from organic contamination, and fresh air which is foggy, moisture-laden, or impure from any cause. It is sufficient to point out that the influence of climate, although important, is not everything; that excellent results have been obtained at resorts where the climatic conditions are only mediocre and not decidedly superior to those prevailing in some of the home sanatoria; and that our aim should be to make the best of existing conditions at home in the case of that great majority of patients for whom foreign residence is impossible. What is required at present is not to enter into debateable questions of relative climatic advantages—above all, not to take up a position which the average intelligent layman will certainly regard as paradoxical, but simply to insist that a method of treatment which has been successfully tried in Germany and elsewhere is capable of application in this country.

The "hygienic" treatment of phthisis relegates drugs to a very subordinate place. We believe we are correct in saying that at some of the German sanatoria cod-liver oil, creasote, and guaiacol do not find any place in the list of therapeutic resources. The benefits accruing from creasote

and guaiacol are a *quæstio vexata* which every practitioner may try to solve for himself, but we think it is a mistake to ignore the great advantages of cod-liver oil. Whether it be simply an easily assimilated fat or contains other valuable elements may be doubtful, but that phthisical patients often rapidly improve under its use is not in the least doubtful. The prospects of a patient who can take and assimilate cod-liver oil are always, in our judgment, distinctly better than those of a patient who cannot. A point in the "hygienic" method of treatment which has our unqualified approval is the great attention given to the state of the skin. Counter-irritation is still the prevailing notion in this country and in France where Professor JACCOUD especially has extolled it in the most unqualified terms. It is very doubtful whether it does any good as a routine treatment, although it may have a temporary value where there are pleuritic complications or pains of any kind. The German plan is by friction, towelling, tepid or cold sponging, douching, and baths to keep the skin in a perfectly hygienic state, to "tone" it, to check night sweating, and to make the patient impervious to chills. We cannot doubt that, speaking generally, this plan is much to be preferred to the routine application of iodine or other counter-irritants.

THE instinct of self-preservation in man finds one of its most familar and most characteristically human illustrations in the interest which the subject of longevity never fails to excite. One and all, the irritable and the patient alike, we are prone while oppressed by the rigour of hard circumstance to wish ourselves happily delivered from the life which we acquired without our option. But the time we choose for our escape is ever not yet. Life is our habit, our very oldest acquaintance, the one thing of all that we feel at home with and therefore we even in trouble endure, awaiting its farewell rather than offering ours. And if it be so at the common worst of the human lot how much harder it is "to part when friends are dear." For the same reason, and also because of that ever-sanguine hope the foresight of which we always trust rather than another's, who of us does not at some time look forward to old age and wish it well? The promises of hope appear at least to agree with the plan of nature, for we are not without evidence that the term of human life is being steadily lengthened under the favouring conditions of modern civilisation. This much is clearly shown by the statistics of successive Registrars-General, for the so-called "middle arch of life" which was formerly erected over the forty-fifth year of age now spans the forty-ninth.

Some interesting observations on this subject are contributed by Dr. W. AINSLIE HOLLIS in a paper which we print on another page. The writer contrasts a tendency to diminution in the duration of life in certain breeds of domestic animals with the opposite movement in the life-history of man. He shows, for example, that shorthorn and Hereford cattle have had engendered in them—no doubt by a process of selected breeding—a disposition towards rapid maturity with its consequent issue in the shortening of their life-period. He recognises in other animals an exactly opposite process, the proportion between adolescence and the life-period being retained in this case also. From these analogies he argues that the extended duration of human life in like manner bears a constant relation to a late-ripening youth. Furthermore, he notices a social reflection of the same tendency in the increasingly prevalent custom of postponed matrimony. He traces in the annual reports of the Registrar-General a steady decrease in the number of marriages among minors and a more than compensating increase in those among persons between twenty-five and forty years of age. It is probable that financial exigencies have had much to do with this result or even everything to do with it. Nevertheless, it is no doubt on the whole, and within certain limits, of happy omen for the extension of life that men and women marrying not too early should be thus enabled to endow their progeny with richer gifts of mind and body. Not less fortunate in the same connexion is the late retention of bodily energy as shown both in the performance of work and in muscular recreation which, though not peculiar to these modern days, is noticed by Dr. HOLLIS as one of their most wholesome characteristics. The why and wherefore of old age have been studied with much care and stated with approximate clearness by Sir GEORGE HUMPHRY in his well-known treatise on the subject. No one to our knowledge has come nearer than he to the formation of an accurate conception of their meaning. It will be remembered that the total number of aged persons whose life-history was examined by him was close on 1000 and that 74 of these were centenarians. The conclusions arrived at by him were briefly these:—1. That the primary factor in a long life consists in an inherited durability; the vital machinery is wound up to go for a given period and but for accidents or in spite of them it will go till the time appointed. 2. That an important part of the primary inheritance is good digestive and nutritive power. 3. That temperance is necessary in the use of the nutritive functions both in eating and in drinking and in regard to all kinds of food and drink. 4. That an energetic temperament and active habits conduce to longevity.

Dr. JULIUS ALTHAUS, whose paper on the same subject we also give at length, endeavours to explain the phenomena of senility as related to a degeneration of the protoplasm of the nerve-cells in successive areas of the brain and spinal cord. So far the explanation is an hypothesis merely. To what extent it may be capable of proof we are not prepared to say, though it must necessarily happen that some form of degradation of tissue, whether primary in nerve-cells or not, will alone explain the failure of vital power. But Dr. ALTHAUS goes much further than this. Practically he claims to have discovered a more or less potent check upon the progress of senile decay in the methods of electrotherapy. The results in nerve-cell nutrition and resulting rejuvenescence which he claims for this line of treatment are sufficiently striking. He is careful, however, to warn us at the same time that the application of the current must be carried out in a "faultless" manner and he appears to us to forget that obviously the vital energy of the subject, his hereditary clockwork, must still be in fair working order. We cannot regard the galvanised activity of slowly dying nerve-cells as in any material degree conducive to longevity. That view of life and its durability is obviously the more correct which accounts as of the first importance

the native quality of the human machine and places hardly second the duty of intelligent self-direction and control.

Annotations.

"Ne quid nimis."

A NEW ANTHRAX ORDER.

THE Board of Agriculture has issued an order dealing with anthrax and dated Jan. 17th, 1899. It extends to Great Britain and comes into operation on March 1st, 1899. It revokes the anthrax order of February, 1895. Dung and other litter from the place of outbreak are to be burnt or disinfected and buried to the satisfaction of the inspector. Precise instructions are given as to the disposal of carcasses. They must either be buried as soon as possible in the skin, at a suitable place to which animals will not have access, in lime at a depth of not less than 6 ft. below the surface, or they must be destroyed by exposure to a high temperature or by chemical agents in a horse slaughterer's or knacker's yard or other place approved for the purpose by the Board. A carcass of a diseased or suspected animal shall not be buried or destroyed otherwise than by the local authority or be removed from the farm or premises upon which the animal died or was slaughtered except for the purpose of being buried or destroyed. Before a carcass is removed for burial or destruction all the natural openings must be plugged with tow or other suitable material saturated with a disinfectant. In no case shall the skin of the carcass be cut, nor shall anything be done to cause the effusion of blood, except by a veterinary inspector and for the purpose of microscopical investigation. Disinfection in cases of anthrax shall be performed by the local authority at their own expense and shall consist in thorough sprinkling with freshly-burnt lime or other suitable disinfectant and subsequent washing with limewash containing in each gallon 4 oz. of chloride of lime or half a pint of commercial carbolic acid. The measures applicable to fields are left to the discretion of the local authority or their inspector.

THE IRISH DISPENSARY SYSTEM AND THE ABUSE OF IT.

IT is very difficult for Englishmen, or even Scotchmen, to understand the medical practice of Ireland or the system by which the people of Ireland are attended. It seems to alternate between a system of classical fees on the one hand and one of practical pauperism on the other. The interesting article on the subject in THE LANCET of last week by our Special Commissioner may be accepted as a *résumé* of the question and the pauperising tendency of the system is much more evident than its tendency to evoke fees. We commend this account to the attention of all in this country who wish to extend public arrangements for medical attendance on the poor and would place such arrangements under the care of guardians or other Poor-law authorities. A very large proportion of the medical practitioners of Ireland are dispensary medical officers. The disposal of red tickets requiring the attendance of the medical officers belong to what is called the Dispensary Committee. This committee is made up largely of shopkeepers and publicans who find the tickets very useful to their customers, even customers who are well able to pay for their own medical attendance. No regular meetings of the committee take place. Such meetings as are held are often very casual and unbusinesslike. "They may consist of a little conversation between committee-men by the side of a car or standing under a hedge." It may well be that under such a system there is no proper inquiry into the fitness of applicants and that the friends or customers of the committee receive tickets which they are not entitled to at the expense of the poor dispensary medical officer. Our Special Commissioner shows that such cases occur not only in the rural districts but in the cities of Ireland. If there is anything sound in the desire of Irishmen for an improvement in the system of local government it ought to appear under the new Irish Local Government Act and especially in such an improvement of the Irish dispensary system as will raise the independence of the medical officer and the self-respect of the Irish people. The legend of the guinea fee in Ireland and its working may be studied in this article as well as the tyranny of the dispensary system. One anecdote is worth repeating concerning a medical officer at Markethill, in the north of Ireland. This medical officer was ill when a messenger came and offered him two guineas to go to see a patient at a considerable distance. He replied that he was too ill to go and that he preferred sacrificing the fee rather than run the risk of aggravating his condition. The messenger said that he would have to go all the same. A red ticket was procured and as the medical officer could not get a medical certificate entitling him to refuse his services he had to go. Unfortunately, the competition for such dispensary appointments is great and gives the Irish Poor-law authorities too much excuse for resolutely postponing the due consideration of the grievances of the dispensary officers.

"GLASS POISONING."

WE understand that a case is shortly to come before one of the criminal courts in America which will be of unusual interest. A woman is charged with the murder of an aged husband by feeding him with glass ground up in an ordinary coffee mill. The glass is thought to have been given in oatmeal porridge. This method of poisoning is supposed to have been a favourite one in the sixteenth century and is said to be still practised amongst savage tribes who have access to the needful material. Medical literature, however, contains but few recorded cases. Glass may be a "noxious substance" by virtue of the *mechanical* injuries which it can produce but is not therefore a poison in the legal sense of the word. A case of this nature with references to previous observers is recorded in the *Edinburgh Medical and Surgical Journal* for 1824, p. 225. Dr. W. Turner of Spanish Town, Jamaica, there relates that an attempt was made by a negro woman to poison a whole family with pounded glass. The persons on whom the attempt was made were seven in number and none of them suffered any inconvenience. In the *Midland Medical and Surgical Reporter*, 1828, p. 47, Mr. William Hebb, surgeon, of Worcester, records in considerable detail the case of an infant who was destroyed "by some person or persons administering to it a quantity of roughly pounded glass." A considerable quantity of gritty powder, proved to be powdered glass, was found in the stomach which "was lined with a thick layer of tenacious mucus which was streaked with blood and it required to be peeled off before the villous coat beneath could be exposed to view. This last was in a state of amazing vascularity." Another case is reported in the *Allgemeine Wiener Medicinische Zeitung*, 1863, viii., 254. A case of attempted suicide by this means is recorded in the *Boston Medical and Surgical Journal*, 1871, p. 191. A young girl, aged sixteen years, desiring to end her life pounded up a small glass bottle into fragments of the size of a split pea and under; of these she swallowed a teaspoonful, taken at several times in bread. Although she experienced considerable pain and discomfort she subsequently recovered. The favourable result may have been due to the

bread protecting the stomach and intestines from injury. The small number of cases on record and the immunity which experimenters have enjoyed from harm after swallowing powdered glass would show that death produced by these means is not nearly as common as the remarks usually to be found in medico-legal text-books would lead the reader to imagine. In an Inaugural Dissertation published in Paris in 1820 by Le Sauvage it is stated that 2½ drachms were given to a cat without injury, also that a dog took 6 oz. or 7 oz. in eight days without any symptoms manifesting themselves. Le Sauvage himself swallowed a considerable number of similar particles without sustaining any inconvenience. Professors Baudelocque and Chaussier in 1808 reported a case at Paris in which the prisoner was supposed to have poisoned his wife with pounded glass. This substance was actually found in the stomach of the deceased, and this organ as well as the intestines exhibited signs of great irritation. After a careful consideration of all that had been written on the subject, however, they gave their opinion that pounded glass is not a poison, and suggested that the glass in the stomach was derived from some vessel of that material being broken by her teeth during the convulsions which preceded death.

THE BUCKLAND FISH MUSEUM.

THE late Mr. Frank Buckland, a member of the medical profession and an enthusiastic naturalist, after many years of patient and laborious work brought together a large collection of useful objects and scientific specimens relative to our fisheries and in particular to the interesting family of the salmonidæ. There is no doubt that this museum has been sadly neglected for a long time past and is a standing blot on our national treasure-house at South Kensington. A "select committee" has now recommended that it should be abolished. To avert such a barbaric fate an influential memorial signed by members of various fishery boards, angling societies, and many distinguished "fishermen" has been prepared for presentation to the Lord President of the Council and the President of the Board of Trade, strongly protesting against such an unworthy disintegration of so valuable and choice a collection. The late Sir Richard Owen, one of our greatest naturalists, has left on record his opinion of this museum, looking upon it as "a valuable means of impressing upon all concerned or interested in the improvement of fisheries, and especially of the salmon rivers, the best and most appropriate and successful measures to that important end." We are convinced that this museum should soon be rescued from an undeserved oblivion and that, as it is the foundation-stone of the present Fisheries Museum of the Science and Art Department, its position should be permanently established and its sphere of usefulness extended in our midst. Why could not the Government Inspectors of Fisheries without serious detriment to their present duties as well as those of the Fisheries Department and representatives of the Fishmongers' Company constitute an advisory board of management, with a view to increased efficiency and further development of the museum? We would ask whether it would not be possible for those who are interested in our fisheries and in economic fish culture to have some tangible encouragement given them to endeavour frequently to deposit in this museum such objects of real scientific interest as might prove of permanent use for reference and record? We admit that important additions have from time to time been made by the munificence of private enthusiasts, but unless some combined national effort is now made to save this unique collection we fear that the subject will quietly lapse and be for ever lost on the sinking sands of a tardy officialism. We would in passing like to inquire if any society "having for its objects the collection of statistics relative to fisheries, the discussion of questions bearing upon fishing interests, and the elucidation of problems of natural history which directly bear upon the subject" has ever come into existence and, if so, what is the extent of its labours and investigations? We are impressed with the fact of the national importance of our sea fisheries. The latest statistics (1896) published by the Board of Trade bring to light three outstanding data. The total value of all fish landed on English and Welsh coasts during that year was £4,574,738; the number of registered fishing boats employed in the sea fisheries of the United Kingdom was 24,091; and the number of men and boys *constantly* employed in the fishing industry in the United Kingdom was 71,314. We hope that the memory and priceless labours of the genial Frank Buckland may ever remain a treasured legacy with the intelligent people of this country.

THE STRUCTURE OF THE MAMMALIAN GASTRIC GLANDS.

IT is well known that there is considerable difference of opinion in regard to the structure and functions of the glands of the stomach. The presence of the large parietal, ovoid, oxyntic, or adelomorphous cells, sometimes called "border" cells, in the fundus glands and their absence in the pyloric glands, the coarsely granular character of the chief cells in the fundus glands and their finely granular character in the pyloric glands, constitute well-marked differences between the two sets. It has, moreover, been shown that the pyloric and fundus gland cells of man, the pig, and other animals react differently to various staining agents. On the other hand, the presence of pepsin in the pyloric glands is admitted by most observers. Dr. R. R. Bensley who has lately occupied himself with this subject, studying it chiefly from a histological point of view, holds that the present state of our knowledge does not permit of any comparison between the pyloric glands and the other glands of the stomach nor can they be compared with any of the gastric glands of the lower vertebrates. He believes that the pyloric gland cells are in most mammals closely allied to, and in the cat, dog, and rabbit identical with, certain cells in the neck of the fundus gland which up to the present have been regarded as ordinary chief or inconspicuous cells. Dr. Bensley took as the starting point of his researches the gastric glands of the stomach of the frog and he describes a fundus gland of that animal as divisible into three portions—a duct or stomach-pit lined by mucus-secreting cylindrical cells similar to those of the surface; the neck, occupied by large vesicular cells, also probably mucus-forming; and the body of the gland presenting granular protoplasmic cells which secrete both acid and pepsin. Now the pyloric glands of the frog are made up of only two kinds of cells—those of the body and those of the duct. The former resemble the large mucus-secreting neck cells of the fundus glands and, like them, stain intensely with Mayer's muc-hæmatein solution Dr. Bensley's researches have enabled him to satisfy himself that in the fundus glands of many mammals there are cells which are morphologically and physiologically equivalent to the mucous neck cells of the batrachian gland and that the same relationship exists between these and the pyloric gland cells as obtains in Anura. These cells in the neck of the gland have been in great measure overlooked on account of their small size and are generally regarded as small pepsin-secreting chief cells. In the cat and dog Dr. Bensley holds that the fundus glands contain two kinds of chief cells—those of the body and those of the neck of the gland. The former secrete ferment and present numerous large zymogen granules accumulated near the lumen, whilst the outer protoplasmic zone of each cell dyes deeply with nuclear dyes like hæmatoxylon and presents a coarse fibrillar

structure. The staining properties of this part of the cell are due to the presence of a kind of chromatin which may stand in a genetic relation to zymogen and which has been named prozymogen. He regards the cells of the neck of the gland and the cells of the pyloric glands in the cat and dog as of the same nature for reasons which he assigns. The chief cells of the neck of the fundus glands and the pyloric gland cells of the cat and dog are the physiological and morphological homologues of the mucous neck cells and pyloric gland cells of the frog with which they correspond in situation, structure, functional changes, and staining. The cells of the lowest portion of the gland duct or pit are of a type intermediate between the surface epithelium and the mucin-secreting neck cells or pyloric gland cells and form the fundamental type to which the origin of both must be traced. Some very good figures illustrate Dr. Bensley's article.

SEWAGE DISPOSAL AT MANCHESTER.

AT the meeting of the Manchester City Council on Jan. 4th there was a long discussion on the ever-recurring question—"What must be done with the Manchester sewage?" It was not remarkable as bringing out any new facts, but only as showing the tenacity with which some members of the council cling to the simple but costly and crude plan of running the filth of the city some sixteen miles or so down a big drain to the tidal waters of the Mersey. Probably Liverpool and some of the other towns on the estuary might object to its being carried backwards and forwards by the tides in front of their doors. The inquiry by the Local Government Board on Jan. 12th and 13th was adjourned for three months, but the evidence given by Professor Frankland and Professor Perkin and by Mr. Baldwin Latham was interesting and important. As Professor Frankland said, the sewage of Manchester is treated by means of chemicals and though the effluent may be fair it undergoes putrefaction sooner or later from the presence of dissolved organic matters. This fact had led him to conclude that the chemical treatment should be abandoned and "that a real purification system should be introduced." In the land treatment "the purification was really effected by bacteria," as in the "contact beds," and the bacterial system was simply a development of the land treatment. They had found that from 50 to 70 or 80 per cent. of the impurity was removed by one contact or bacterial bed and that if the contact were repeated 50 per cent., say, of the impurity left in the effluent was got rid of. "It was necessary to build up a suitable bacterial population in these beds and with that object they commenced operation with settled sewage and afterwards introduced raw sewage. They had thus gradually accustomed the bacteria to a more and more concentrated sewage with which they had shown themselves capable of dealing." To test the liability of the effluent after bacterial treatment to putrefaction a certain quantity was kept at a temperature of 80° for five days. At first it was capable of putrefaction but not latterly. Details have to be carried out, but he considered the system "thoroughly satisfactory for the purification of the sewage of Manchester." "There can be no doubt about it," the witness remarked with emphasis. In his experiments Sir Henry Roscoe obtained good results by chemical treatment followed by filtration on bacterial beds but it is important to find that chemical treatment is unnecessary. Mr. B. Latham said that twenty proposals for the treatment of the Manchester sewage had been received and carefully considered. Dr. Perkin, Professor of Organic Chemistry at Owens College, generally confirmed Professor Frankland's testimony. He considered the bacterial system the only possible one and when asked by one of the commissioners, "As regards Manchester or the whole world?" replied, "the whole world." The experts at all events consider the problem solved and it may be mentioned that their experiments and observations were not limited to test tubes but that they dealt with about 500,000 gallons daily. Mr. G. J. Fowler, chemist to the Rivers Committee of the corporation, said that the effluent would keep the Ship Canal clean. An adjournment for the consideration of plans and other preparatory work was allowed for three months.

GUARDIANS AND THE "CONSCIENCE CLAUSE."

THE Burslem Board of Guardians in Staffordshire have passed a resolution protesting against the "conscience clause" in the new Vaccination Act and appealing to the Local Government Board to reconsider the matter with a view to again making vaccination compulsory. They also ask other boards of guardians to join them and already several boards have decided to petition the Local Government Board on the subject—in some cases after heated discussions. Northwich Union, Richmond, and Wells have cast in their lot, as well as the following unions in the west—Barnstaple, Honiton, Newton Abbot, Plympton, and St. Thomas. Honiton describes the "conscience clause" as not only vexatious but distinctly retrogressive in character and so opposed to sanitary experience as to be little less than a national calamity. At Newton Abbot on Dec. 28th, 1898, Mr. J. W. Ley, F.R.C.S. Eng., one of the guardians, said that all over the country people were condemning the abolition of compulsory vaccination and the unions would one day have to pay a most fearful bill, not only in money but in moral responsibility, for the part which they had taken against vaccination. He should be sorry to stand in the shoes of the anti-vaccinationists when the day of retribution came. Mr. J. Widdecombe, supporting Mr. Ley, said that no man should be allowed to exercise his conscientious objection when it meant danger to his fellow-men.

SANITATION IN SENEGAMBIA.

ACCORDING to a medical journal published in Paris[1] sanitary matters would seem to be at a discount in Senegambia. Dysentery is described as dominating the entire country, giving rise to great inquietude among the French inhabitants of St. Louis. The cause of the prevailing unhealthiness is said to be the foul condition of the River Senegal which not only serves as a source of water-supply for domestic purposes but is also converted into a general depository for filth and ordure. Early in the morning, says the narrator, a procession of native women and girls may be seen wending its way towards the stream, each individual bearing upon her head a vessel containing the malodorous refuse which had accumulated in her dwelling during the preceding twenty-four hours. The current though fairly rapid is unequal to the task of sweeping the viscous masses down to the sea and accumulations of putrescent organic matter consequently take place which act as breeding grounds for noxious microbes, while at the same time they poison the surrounding air with their pestiferous emanations. Europeans not being acclimatised like the natives naturally suffer to an inordinate extent from this lamentable condition of things, and yet no adequate remedial measures have so far been instituted. As long as the river is in flood the water, though yellow from suspended alluvium, is fairly potable after simple filtration, but when the level begins to fall and the current to fail the polluted contents at once cease to be wholesome and very soon become positively dangerous. During the dry season the inhabitants of St. Louis are compelled to provide themselves with water for drinking and cooking purposes as best they may. Some use river

[1] Le Progrès Médical, quoted in the Journal d'Hygiène of Nov. 3rd, 1898.

water which was stored at flood time in cisterns and others utilise rain water similarly conserved; the higher officials have tank-barges which they send up stream beyond the polluted area, while the wealthy drink only imported waters. Some years ago in order to remedy matters the colonial government adopted a project for conveying water to St. Louis from Richardtoll, fifty miles up-stream, and in due course funds were voted for the purpose. Unfortunately, however, owing it is said to miscalculation, the amount provided proved to be insufficient, and after the works had been some time in progress the plans were radically altered. Iron pipes had been transported up the river as far as Richardtoll, but in spite of this a new intake was fixed on at a spot not more than 18 miles from the town, the superfluous tubing being brought down again and transferred to Dakar for utilisation in the waterworks at that station. An official inquiry into the whole question was ordered some time ago but as yet no decision has been arrived at. The narrator has nevertheless no hesitation in asserting that a great deal of money has been wasted without effecting an iota of amelioration as far as the sanitary condition of St. Louis is concerned.

THE CHEMISTRY OF THE TUBERCLE BACILLUS.

A CONTRIBUTION to the chemistry of the bacillus of tubercle appears in the last part of the twenty-sixth volume of Hoppe-Seyler's *Zeitschrift für Physiologische Chemie*, written by Dr. W. G. Ruppel whose experiments were performed in the private institute of Dr. Behring of Marburg. He commences by observing that Kühne demonstrated that the tubercle bacillus did not effect any material change in a culture fluid composed of Witte's peptone, meat juice, and glycerine. The chief alterations noticed were the formation of an intensely red colouring matter and of some unknown substance of peculiar odour. Dr. Ruppel used a large quantity of meat broth and allowed the tubercle bacilli to develop in it for a month. The fluid was then filtered after being evaporated at a temperature of from 30° to 40° C. to one-twentieth of its volume. The material left on the filter was extracted by means of alcohol and a saturated solution of common salt and evaporated to dryness. About five grammes of a granular powder which was easily soluble in five times its weight of water and was only slightly hygroscopic was obtained from each litre of the original fluid. On the addition of acetic acid a slight precipitate of achrooalbumose occurred. The addition of common salt caused a considerable precipitate of primary albumoses in the neutral solution and in the filtrate of this precipitate acetic acid threw down a considerable proportion of primary and deutero-albumoses. Further experiments showed that the powder contained about 64 per cent. of deutero-albumoses. He admits that he has been unable to obtain any typical and specific substance from the culture fluids in which the tubercle bacillus has multiplied. The only point which appears to have been established is that the bacilli of tubercle possess a tryptic faculty by virtue of which they are capable of acting on albuminous substances, forming peptones and coincidently tryptophan. The tubercle bacilli themselves appear after filtration as snow-white cheese-like masses which after elutriation with sterilised water in a vacuum drying-pan over sulphuric acid form a grey very friable mass. Three categories of fats can be obtained from dried tubercle bacilli according to the successive action of cold alcohol, hot alcohol, and ether. Cold alcohol extracts about 8 per cent. of the total weight of the bacilli, becoming at the same time of an intense red colour. This colouring matter does not pre-exist but is in the form of a chromogen which by the action of the alcohol under the influence of oxygen becomes red. The same colour appears when the bacilli are washed with alcohol and allowed to dry by exposure to the air. The extract effected by means of cold alcohol when evaporated to dryness is of the consistence of butter and contains a considerable quantity of free fatty acids. If it be treated with soda lye and ether, the free acids separated, and the ether evaporated, a fat is obtained which melts between 55° and 60° C. This fat easily saponifies and besides free fat acids yields a body soluble in ether which may be regarded as one of the higher alcohol series. Hot alcohol applied to the mass which has been extracted with cold alcohol gives other waxy, and on evaporation completely colourless, material. The melting point cannot be ascertained since it begins to melt at 65° C. but is not completely clear even at 200° C. It does not saponify easily but seems also to be composed of the fatty esters of the higher alcohols. The ether extract melts also between 65° and 70° C. and smells like beeswax. The quantity of material extracted with alcohol and ether varies according to the age of the culture from 8 to 10 per cent. up to from 25 to 26 per cent. of the total weight. The extract obtained by water or dilute alkaline solutions is capable of reducing alkaline copper oxide solution. No solutions of tubercle bacilli give very clearly marked albumin reactions. Where tubercle bacilli purified of fat are exposed to superheated steam about from 18 to 20 per cent. of their weight is obtained of albumose-like substances analogous to the atmidalbumoses of Neumeister. These peculiar substances, which cannot again be dissolved, seemed to contain in several cases the chief proportion of the active material of the free bacilli. Koch by a particular process has broken up the bodies of the bacilli which then can no longer be distinguished. The reactions of the fluid obtained by adding water to the mass are then different; a milky emulsion is obtained with alkaline reaction from which the bodies of the bacilli can be separated by a centrifugal machine. The solution contains no albuminous bodies, but it has the remarkable property of precipitating albumins from their solution. Acetic acid throws down a considerable precipitate which contains phosphorus and is dissolved on the addition of dilute alkaline solution. Dr. Ruppel has obtained from the solution of the tubercle bacilli a new protamine which he has named "Tuberkulosamine." He believes it naturally exists combined with a nucleinic acid.

THE "MEDICAL HALL" IN LAMBETH.

AN inquest was held on Jan. 16th by Mr. Braxton Hicks at the Lambeth coroner's court with reference to the death of Elizabeth Davis, aged seventy-six years. The deceased's daughter stated that on New Year's Day she heard a noise and on going upstairs found her mother lying on the hearthrug. She went for Mr. Holland and "saw a young gentleman who came and ordered beef-tea and brandy for the patient but did not examine her." Later Mr. Holland came and gave instructions, saying that he thought she had broken her hip. He came again on the following day and then not again until Jan. 9th when witness fetched him. He was accompanied by a lady and was the worse for drink. He recommended the removal of the patient to the infirmary but witness refused to move her and she died on Jan. 11th. A son and daughter-in-law of the deceased both gave evidence to the effect that Mr. Holland was the worse for drink and that the lady who accompanied him had to help him upstairs, saying, "Doctor, you are getting old and feeble now." Mrs. Blumenthal, of 121, Tyer-street, Lambeth, said that she was the lady in question. Mr. Holland was perfectly sober. John Blumenthal, husband of the last witness, said that he had acted as an assistant for fifteen years. He was not qualified. He had opened the house in Tyer-street as a "Medical Hall" and had entered into an arrangement with Mr. Holland. Mr. Holland

had told him not to attend cases. He had never posed as a medical man but he had prescribed over the counter. Mr. Neville Holland, M.R.C.S. Eng., gave evidence. In answer to the coroner he said it was true that he had been struck off the Medical Register for two years. He was now living at Durham-street. He had come to Vauxhall to buy and work up Mr. Blumenthal's practice. Dr. George Nicol Henry said death was due to broncho-pneumonia accelerated by a fractured thigh. Mr. Holland's treatment was correct. The jury returned a verdict of "Accidental death" and censured Mr. Holland for his lax treatment. They also expressed their opinion that the "Medical Hall" ought to be put down. The coroner coincided. This story is in many ways interesting. As to Mr. Holland's treatment of the case it was correct so far as it went, only he might have seen his patient more often. But we cannot understand the frame of mind of a man who having been struck off the Medical Register for covering an unqualified practitioner, and after two years having been pardoned and restored to the Register, "enters into an arrangement" (whatever that may mean) with the unqualified lessee of a "Medical Hall." If he was not "covering" Blumenthal what was his position?

THE BARKER ANATOMICAL PRIZES.

IT is announced that a prize of £21 for dissections to illustrate the anatomy of the larynx is offered for competition and is open to any student whose name is on the anatomical class list of any school in the United Kingdom. The preparations must be sent to the Curator of the Museums, Royal College of Surgeons, Dublin, each being marked with a fictitious signature and accompanied by a sealed envelope bearing outside the same signature and containing the full name of the competitor together with a declaration to the effect that the work of the preparation has been carried out by himself. The printed form necessary for this declaration can be obtained on application to the curator. The cost and risks of transport must be borne by the student. The preparations entered must be placed in charge of the curator before June 1st, 1899. The dissections are to be mounted in vessels fitted with glass covers, but the covers must not be sealed down. The adjudicators are the Curator of the Royal College of Surgeons in Ireland, the President of the College, and the Professor of Anatomy of the University of Dublin.

RARE SYMPTOMS OF IODISM.

AT a recent meeting of the Société Médicale des Hôpitaux M. Danlos described some rare symptoms produced by iodide of potassium. A man, aged sixty years, took 7½ gr. of iodide of potassium on one day and 15 gr. on the next, when he had slight signs of iodism—coryza and disagreeable taste in the mouth. There was considerable suprahyoid tumefaction, symmetrical and not extending to the parotid region. There was no spontaneous pain and but little tenderness and the colour of the skin was not altered. The saliva was not affected. Palpation showed no œdema but an elastic swelling in which the submaxillary glands were felt to be swollen and a little tender. The iodide was supposed to be the cause and was stopped. Three days later the swelling had disappeared. To complete the proof a similar result was produced twice on administering the drug. Elimination of iodine was rather slow; two hours after administration there was scarcely a trace in the urine and it was found abundantly on the following day. The only allusion to the subject which M. Danlos could find in literature was the statement of M. Fournier that in the treatment of syphilis swelling of the salivary glands, principally of the parotid gland, had been noticed. Another case was related. An old patient of the Saint Louis Hospital who had suffered from syphilis was given daily 45 gr. of iodide of potassium. After ten days he complained of violent itching and an erythematous and bullous eruption developed. The iodide was stopped but the eruption continued to appear and twelve days later the itching was excessive, preventing sleep. There was a discrete bullous eruption on the back of the hands, feet, face, and ears. On the trunk and arms there were numerous erythematous patches and urticarial wheals both on and apart from the latter. The eruption declined under arseniate of soda, but only after ten days' administration. A point of interest was that the eruption continued to appear for more than six weeks after the discontinuance of the iodide of potassium. Also the eruption was a typical dermatitis herpetiformis as described by M. Brocq—a form of eruption not previously observed as a result of iodism.

"GREAT BRITAIN AND THE PLAGUE."

OUR readers are aware that the astounding action of Sir Arthur Hardinge in respect of the plague-infected ship the *Bhundara* has been to a great extent set right, inasmuch as the retrograde orders to repulse the ship have been suspended—that is to say cancelled. There still remains a difficulty as to the cargo of grain of the *Bhundara*—namely, rice—and the merchants of Bombay and Karachi have protested against a proposed further breach of the Venice Convention—namely, the refusal to allow this cargo to be landed on the ground that it is infected. A few cases of plague in the ship's hospital can hardly be imagined to have infected a cargo of grain closed down in the hold of the vessel, and it is to be hoped that the authorities will frankly accept the Convention in its entirety and order it to be landed. If those on shore choose then to deal in one or other way with any goods or cargo that have been landed, the responsibility will be solely a local one. Part measures should never be entertained where an international agreement is in question, and if the East African Government expect to be treated on the principles of the Venice Convention as regards ships leaving their ports they must themselves be careful to act on the same principles with respect to arrivals on their own shore. It is the attempt to apply the Convention in part that has led to all this trouble and difficulty. If the administration had made preparations on shore to isolate a few cases of plague, the disinfection of the vessel, &c., could at once have followed on the landing of the sick and the passengers and the whole matter would probably have ended without mishap.

THE SALE OF UNWHOLESOME FOOD.

A CASE of considerable medical and legal interest was heard at the County of London Sessions recently. Charles Baxter appealed against two convictions by Mr. Kennedy sitting at the Greenwich police-court, the first for having sold a quantity of tinned goods which were afterwards seized by the sanitary inspector of the Rotherhithe Vestry and condemned as being unwholesome and unfit for the food of man, and the second for having been the owner of other tinned goods which were seized and condemned at the same time. The maximum fine of £50 was inflicted on each summons. It appeared that on Dec. 3rd, 1898, the sanitary inspector to the prosecuting vestry entered a general shop kept by a Mrs. Grant in Paradise-street, Rotherhithe, and seized a quantity of tins of fish and soup the contents of which were found to be unfit for food. Most of them formed part of the stock in the shop but over 400 tins were found in the yard and scullery at the back of the shop. They were condemned to be destroyed. It was then found that the business and stock had been bought by Mrs. Grant on Nov. 3rd from the appellant Baxter who had until then kept the shop and that the goods seized and condemned had been

left there by him. He was accordingly summoned and convicted. By a sub-section of the Act on which the prosecution was founded it is provided that the seller shall not be liable to conviction if he proves that when he sold the articles in question "he did not know, and had no reason to believe," that they were unsound. Evidence was called to prove that Baxter had bought the goods found in the shop from firms of good standing and that he had no grounds for supposing that they were bad. As to the goods found in the yard he contended—and it was admitted by Mrs. Grant—that he had not sold them to her, but had left them on the premises saying that they were bad and that he would send for them and have them destroyed. The court upheld the first conviction and the sentence thereon on the ground that even if the appellant had not direct knowledge that the goods were unsound he had reason to believe that they were; but the second conviction was quashed as there appeared to be some doubt whether the goods found in the yard and scullery were in fact intended for the food of man. This decision certainly seems to be a just one founded on common sense. The results of eating tainted food may be so serious that heavy penalties must be inflicted on those selling such food, knowing or suspecting that it is bad. At the same time it is only fair that if the accused sells the food in entire ignorance that it is unsound he should have an opportunity of calling evidence in his favour, and if no culpable negligence is found no penalty should be inflicted.

MEDICAL RESEARCH IN BRITISH CENTRAL AFRICA PROTECTORATE.

WE hail with satisfaction, as a movement in the right direction, the beginning of a project on the part of the medical staff of the Protectorate of British Central Africa to publish a series of small circulars dealing with cases of climatic disease, more especially with those of hæmoglobinuric fever, coming under the observation of the medical officers serving in that part of the African continent. The second number of the publication is before us which, besides containing much useful and practical information, is likely to prove very serviceable in calling attention to various points still requiring elucidation, and about which further scientific and systematised observations are much needed. The idea is that medical reports of all cases of importance are to be forwarded to Zomba where they will, if they are of sufficient interest and value, be printed and circulated among the medical officers of the protectorate who will be invited to supply any fresh information which they may desire to give together with comments for publication in the following issue. We do not know who in particular deserves the credit of starting the project in question, but we assume that Dr. G. Douglas Gray, the acting principal medical officer in British Central Africa at Zomba, will generally supervise and edit the publication; and anyway the arrangement strikes us as a well-conceived and good one. We hope that it may prove successful in getting together a number of well reported observations of cases calculated to throw light on hæmoglobinuric fever and some other local climatic diseases. As a sample of the nature and character of the subjects treated we may say that the circular before us contains the following articles: A Study of Black-water Fever, Notes on Quinine in Hæmoglobinuria, A Case of Black-water Fever with Description of the Blood Examination, and an interesting case of Gunshot Wound by the Snider Bullet. An impetus has been recently given to the study of tropical disease, and not before it was needed, seeing the number and extent of our various colonial possessions. Medical officers and practitioners proceeding to tropical and subtropical countries can have, of course, little or no practical knowledge of the diseases incidental to such climates and are naturally desirous of obtaining all the information they can from those who have already studied them clinically on the spot. Professor Koch's lecture on Malaria at Berlin in June last, moreover, furnished some new and important aspects and features for further research. The actual cause, for example, of black-water fever is still obscure, some regarding it as the gravest and most pernicious form of malarial infection, others as a specific form of fever attributable to the presence of a still undiscovered micro-organism, whilst some affirm that the black urine and extreme prostration witnessed in this disease are, in reality, only signs of quinine poisoning. The papers in the circular under notice give a good account (as far as is yet known) of this disease; but there remains very much to be cleared up in regard to its exact nature, causes, and pathology.

MR. WILLIAM CADGE AND THE NORWICH HOSPITAL.

IT is not often that a medical man is able to give large donations to hospitals other than of time and skill. It is, therefore, with a double sense of interest that we offer our congratulations and thanks in the name of the medical profession to Mr. William Cadge for his second princely gift of £10,000 to the Norwich Hospital. At the quarterly meeting of governors held on Jan. 14th Mr. Cadge was present. In speaking on the report he mentioned that "lump sum" donations did not go very far in increasing the annual income of a hospital and therefore that there was just as much need for annual subscriptions as before. We have no doubt that the Norfolk and Norwich Hospital will be pleased to receive and be able to make use of all the annual subscriptions that are sent to it, but Mr. Cadge must not in his modesty be allowed to belittle his own generosity. A perpetual endowment of £300 or £400 a year is a substantial increase to the resources of the Norfolk and Norwich Hospital and will enable that institution with still freer steps to follow up its excellent charitable and scientific traditions. But such an endowment by one citizen does not excuse others from bearing their share of a noble burden. Rather it should excite them to imitation of the donor's munificence.

MILK-SUPPLY AND TUBERCULOSIS: THE INFECTIVITY OF CREAM.

WE printed last week a paper in which will be found recorded the results obtained by the late Professor Kanthack and Dr. Sladen in their investigations as to the presence of the tubercle bacillus in sixteen different milk-supplies in Cambridge. The methods which they employed are given in detail and are clearly of so thorough a character as to leave no room for reasonable doubt as to the accuracy of their results. There can be no question that animal inoculation carried out with due precautions and controlled by microscopic observations constitutes the most delicate test at our disposal for the detection of the tubercle bacillus, whether in milk or elsewhere. This test was lavishly employed, no less than 6 guinea-pigs having been inoculated from each milk-supply; the results show that this number was by no means unnecessarily large, for in two instances out of the 9 in which a positive result was obtained only 1 of the 6 animals inoculated became tuberculous. The facts elicited by Professor Kanthack and Dr. Sladen are indeed striking and, we may almost add, appalling. More than half the supplies tested—9 out of 16—proved infective, while of the 90 guinea-pigs inoculated in the course of the experiments no less than 23 (25·55 per cent.) developed tuberculosis. These results are considerably in excess of those recorded by Delépine in

his recent lecture on the subject[1] and it is of interest to consider what may be the possible reasons for such unusually high figures. It is possible that bovine tuberculosis is abnormally prevalent in the districts around Cambridge, though we have not any statistics to support this opinion. It is probable, again, that the extremely searching character of the animal experiments is in part responsible for the high percentage of tuberculous milk found. But it is also possible—and this is a point which, in our opinion, is of very great importance—that the employment for inoculation not only of the centrifugalised sediment from the milk, but also of the cream, has had a definite bearing on the results. There is an opinion prevalent in some quarters that the danger of conveyance of tuberculosis by cream is slight as compared with milk. These experiments point in exactly the opposite direction. Three times out of the nine cases in which a positive result was obtained did the cream produce tuberculosis when the sediment failed to do so and in no single case was the sediment infective when the cream was not equally or more so. We are not aware that this point—clearly one of the first importance—has ever been distinctly brought out before. It is evidently impossible to disentangle tubercle bacilli from fat globules by mere centrifugalisation. The importance of the part played by milk in the dissemination of tubercle, especially in children, is well enough established. But it is researches like these which drive the facts home into the public conscience, and we heartily wish that more experimental work of this thorough type were forthcoming to emphasise and to elucidate the dangers which attend the consumption of tuberculous milk.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.

THE directors of this society held a quarterly court on Jan. 11th, Mr. Stamford Felce, Vice-President, being in the chair. One new member was elected and the deaths of seven members were reported. Among the deaths the directors had to regret those of three old and valued members—viz., Sir William Jenner (Vice-President), Dr. Hare, and Dr. Munk. One application from a widow was received and a grant at the rate of £50 per annum was made. It was resolved to distribute the sum of £1216 10*s.* among the 50 widows, 10 orphans, and 6 recipients from the Copeland Fund. The expenses of the quarter were £77. A Christmas present of £551 had been given to the widows and orphans on Dec. 18th and a special grant of £20 had been made to a widow suffering from malignant disease.

AN UNDESCRIBED FORM OF OSTEOPATHY OF THE LOWER EXTREMITIES.

AT the meeting of the Société Médicale des Hôpitaux on Nov. 18th, 1898, Dr. E. Hirtz presented a man, aged thirty-seven years, who at the end of 1893 had shooting pains in the legs and knees, of greatest intensity in the left ankle. There was also a little periarticular swelling but no deformity. The feet also became affected. He was treated in hospital during six weeks for rheumatism, and was cured and resumed his occupation of salesman which obliged him to constantly stand. In January, 1894, the swelling reappeared in the same places. In March deformity first became evident; it consisted at first of enlargement of the internal part of the left ankle-joint with weakening of the plantar arch. After a month the right foot was similarly affected. The pain was great and in June he again entered the hospital. Under treatment the enlargement subsided somewhat and he was able to resume his occupation. But the pains and deformity increased. Pressure corns formed on the soles terminating in perforating ulcers. He entered the hospital a third time. In October the left lower limb was much magnified, the thigh was enlarged in its lower third, the leg and foot were still more enlarged, and the internal malleolus was enormous. Palpation showed that the enlargement was principally osseous; it involved the lower half of the femur, the tibia in an increasing degree from above down, and the fibula, which was double its normal dimensions. The foot was converted into a veritable block of bone in which individual bones could not be distinguished. The right lower limb was affected in a much less degree than the left. No other bones were involved, the signs of Paget's disease and of acromegaly were absent. The case resembled one brought before the society in 1892 by Marie under the name of "systematised osteopathy of a type not described." But the latter differed from Dr. Hirtz's case in that the radii and inferior maxilla were affected. There were no signs of syphilis or of locomotor ataxia.

[1] THE LANCET, Sept. 17th, 1898.

OTOLOGY, RHINOLOGY, AND LARYNGOLOGY AT THE INTERNATIONAL MEDICAL CONGRESS IN PARIS.

THE thirteenth International Medical Congress will meet in Paris on Thursday, August 2nd, 1900, and will continue for a week. We are informed that arrangements have now been made to include a special independent section of otology, rhinology, and laryngology, this section being itself divided into two sections, one of which is to be devoted to otology and the other to rhinology and laryngology. For each of these two sections an organising committee has been appointed to deal with the scientific branches of the work. The organising committee of the section of otology consists of Dr. Gelle (president), Dr. Castex (secretary), Dr. Boucheron, Dr. Duplay, Dr. Ladreit, Dr. Lacharrière, Dr. Lannois, Dr. Lowenberg, Dr. Lubet, Dr. Barbon, Dr. Ménière, Dr. Miot, and Dr. Nimier. The organising committee for the section of rhinology and laryngology consists of Dr. Gouguenheim (president), Dr. Lermoyer (secretary), Dr. Cartaz, Dr. Chatellier, Dr. Garel, Dr. Luc, Dr. Martin, Dr. Moura, Dr. Moure, Dr. Poyet, and Dr. Ruault. Communications or inquiries relative to scientific matters should be addressed for the Section of Otology to Dr. Castex, 30, Avenue de Messine, Paris, and for the Section of Rhinology and Laryngology to Dr. Lermoyez, 20 *bis*, Rue de la Boétie, Paris. Inquiries on matters of a business nature, such as railway fares, accommodation in Paris, &c., should be addressed to Dr. Chauffard, general secretary of the Congress, 21, Rue St. Guillaume, Paris. Communications to the Congress may be made in English, French, or German.

THE METROPOLITAN WATER-SUPPLY: ITS BACTERIOLOGICAL AND CHEMICAL CONDITION IN NOVEMBER.

THE official report (just published) on the quality of the water-supply of London for the month of November should be of extra interest since any variation in the quality of the water following the onset of rainfall after an unusual drought would be manifest. Sir Edward Frankland, who conducts his examination on behalf of the Local Government Board, reports that the water supplied by the five companies drawing from the Thames was in every case efficiently filtered before delivery and of excellent quality for dietetic and all domestic purposes. On one occasion, however, one of the Southwark Company's filters was delivering water containing an excess of microbes over 100 per cubic centimetre, but all the other Thames-derived waters were of excellent bacterial quality. The improvement effected in regard to the removal of micro-organisms by filtration was generally 99 per cent. and over. In the case of the

East London Waterworks Company's filtered water on one occasion the water passing some of the filters contained a great excess of microbes over the accepted standard. Sir William Crookes and Professor Dewar, however, report that the East London water-supply has been exceptionally good, the average of 26 samples being only 11 microbes per cubic centimetre, whereas the mean of 126 samples from the Thames-supplied companies is 49 per cubic centimetre. This statement hardly accords with Sir Edward Frankland's results. We should like to know, however, the meaning of the following sentence in Sir Edward Frankland's report. "After *efficient* filtration it was delivered in excellent chemical condition, but one out of the three filters examined was passing water containing a great excess of microbes over the accepted standard." The italics are ours.

CALCULUS OF THE UVULA.

IN the *Boston Medical and Surgical Journal* of Dec. 8th Dr. J. L. Goodall has published the following case which he claims as unique. A coloured female infant, aged two months, suffered since birth from dyspnœa. In the upright position respiration was performed normally through the nose, but in the recumbent position there was considerable obstruction to nasal breathing. On the anterior aspect of the uvula, midway between the tip and the junction with the soft palate, was a white globular mass about four millimetres in diameter, lying apparently immediately beneath the epithelium. The probe showed it to be of bony hardness. It was readily enucleated by a cutting forceps. Under a pressure of 3 lb. it broke into yellowish-white fragments. Microscopically they consisted of amorphous particles, fat crystals, fat drops, and degenerated epithelium. A week after removal the wound had healed and respiration was freer. Probably the mass originated in a mucous gland and the weight in the recumbent position occluded the naso-pharynx. Though no case of calculus of the uvula has been recorded 3 cases of calculus of the soft palate have. A boy, aged sixteen years, had dysphagia and dyspnœa. Two masses were found on the soft palate, one on either side of the uvula, and of about the size of a hazel-nut, which on probing through the dilated mouths of the palatine glands were found to be calcareous.[1] A tampon saturated in dilute sulphuric acid dissipated them. Mr. C. A. Parker, at a meeting of the Laryngological Society of London on Dec. 13th, 1893, reported the case of a young man, aged twenty-nine years, who complained of great soreness in the throat for six or eight months. A calculus was situated in the substance of the soft palate just to the right of the base of the uvula, a portion lying free and resembling a sloughing ulcer. It was removed from what was apparently a cul-de-sac between the muscular layers and when dry it weighed 54 grains. It was composed of epithelial débris, spores and mycelium of gladothrix, and earthy salts.

INEBRIATES AND THE NEW ACT.

DURING last week a woman named Kate Marshall was found guilty of murder, and recommended to mercy by the jury on the ground that she committed the act in a fit of drunken fury. She had already been convicted for stabbing and about twenty times for drunkenness and disorderly conduct. In the same week, if not on the same day, another woman made her appearance at the Guildhall police-court on a charge of being drunk and disorderly for something like the one hundred and fortieth time. These cases serve to remind those interested in the welfare of habitual drunkards and in the possibility of their compulsory reformation that the Inebriates Act of 1898 came into force, nominally at all events, on the first day of this year. Had there been time to get into working order the institutions, the building and organisation of which it contemplates, Kate Marshall, or at all events a person stabbing with less fatal result in similar circumstances of drunkenness, would have found herself liable to confinement in a State inebriate reformatory or a certified inebriate reformatory for three years in addition to or in substitution for any other penalty imposed. The other woman referred to would have been indicted as an habitual drunkard and confined (if convicted) for a similar period, not in a State reformatory, but in a certified inebriate reformatory, the institution of which for the benefit of the less criminal drunkard has been left to the enterprise of public bodies and benevolent individuals. Some portion of whatever delay there has been in inaugurating these undertakings by county councils, borough councils, and private persons, or in adapting existing institutions to the new conditions created, may be in a measure due to the fact that while certified reformatories will in all cases be subject to regulations framed by the Secretary of State no such regulations (by the 21st Section of the Act) can come into effect until they have lain four weeks on the table of each House of Parliament whilst that House is sitting. But at the same time model general regulations upon which the managers of a proposed inebriate reformatory will eventually have to base the rules which they will submit for approval to the Secretary of State have been duly made public, and the nature of the institutions proposed is made tolerably clear by these proposed general regulations read with the Act itself. No doubt as soon as Parliament assembles information will be forthcoming as to the extent to which the Home Secretary has been approached by those desirous of helping to carry out the new law; meanwhile we shall always be interested in hearing to what extent local bodies or private philanthropists are bestirring themselves in the matter and what prospect there is of the Act being rendered effective in the near future by their efforts. Information will also presumably be given as to the date by which a State reformatory will be available for those whose degree of criminality qualifies them for reception in it.

SCHOOLS OF TROPICAL MEDICINE IN LIVERPOOL AND ELSEWHERE.

ON another page will be seen an important letter from the Secretary of State for the Colonies to the Principal of King's College, London, stating that in selecting candidates for the Colonial Medical Service preference should be given to those medical men who have received such bacteriological or similar special training as King's College provides, but that when candidates have been definitely selected they should be required to attend at the School of Tropical Medicine which is being established at the Albert Docks Branch of the Seamen's Hospital. This is noticeable as the first public departure of the Secretary of State for the Colonies from the elaborate and expensive scheme put forth by Sir Henry Burdett in his letter to the *Times* of July 11th, for obviously now no fully equipped general bacteriological laboratory will be needed but merely one for the purposes of clinical investigation and research in tropical diseases. A large waste of public money will thus be avoided. The necessary requirements for such a school have been clearly laid down by Principal Glazebrook and Mr. Adamson, President of the Southern Hospital, Liverpool. The occasion was a luncheon given at Liverpool on the 12th inst. by Mr. A. L. Jones, who has so munificently furnished the funds for starting in that city a school for the study of tropical diseases, and among the guests present were Mr. R. L. Antrobus, Principal Glazebrook, and Professor Rubert Boyce. Mr. Jones's words are worth quoting as showing the scope of the proposed school. Speaking for the committee he said: "They would open a school partly at University

[1] Bosworth: Diseases of Nose and Throat, vol. ii., p. 361.

College and partly at the Southern Hospital for this special training and would appoint a lecturer in tropical diseases and an administrator to deal with the cases and the work. A special landing would be set aside at the hospital for such cases. Nurses who desired would be trained for tropical service as well as medical men." This is the practical manner in which Liverpool has set to work in the prosecution of Mr. Chamberlain's valuable suggestions. Bacteriology at University College and clinical observation and research at the Southern Hospital will be carried out simultaneously, and as 41 cases of malarial fever have been admitted into the hospital since July and the trade of Liverpool with West Africa is large and direct a tropical school in this great centre is obviously the best place for the study in England of West African maladies. Principal Glazebrook, Principal of University College, Liverpool, whilst wishing for a grant in aid of the school, laid much greater stress on the importance of its recognition so that its students should be enabled to obtain the diploma or certificate for the colonial service. Mr. Antrobus, the Permanent Secretary of the African Department of the Colonial Office, assured those present that Mr. Chamberlain would do all he could to assist in any attempts, whether in London or Liverpool, to fight the diseases of the West Coast of Africa. We would again point out that the diseases treated at the Albert Docks Hospital are all brought from India, China, and other Eastern countries, and with the exception of beri-beri (which is almost exclusively brought into England by the native sailors and firemen employed by the Peninsular and Oriental and the British India Steamship Companies) their number and variety are in no way to be compared with those which are treated at Netley. Mr. Chamberlain's colonial surgeons must therefore be trained at a disadvantage with the officers of the Indian and Army Medical Services. If the committee of management of the Seamen's Hospital Society had arranged for the reception of tropical cases at the *Dreadnought* Hospital on the lines adopted by the Liverpool Southern Hospital it would have been quite unnecessary to issue such an appeal to the subscribing public as they have issued. The ambitious scheme which is shown in their proposed enlargement of the Branch Hospital as an adjunct to a lavishly planned school of tropical medicine might have given place to one of modest dimensions and equal utility.

THE lectures at the Royal College of Physicians of London for 1899 are announced as follows. They will be delivered on Tuesdays and Thursdays at 5 P.M. Dr. G. V. Poore will deliver the Milroy Lectures on the Earth in Relation to the Preservation and Destruction of Contagia on Feb. 23rd, 28th, and March 2nd; Dr. G. R. Murray will deliver the Goulstonian Lectures on The Pathology of the Thyroid Gland on March 7th, 9th, and 14th; and Dr. Gee will deliver the Lumleian Lectures on March 16th, 21st, and 23rd, the subject of Lecture I. being The Causes and Forms of Bronchitis, of Lecture II. The Nature of Pulmonary Emphysema, and of Lecture III. The Nature of Asthma.

DR. C. O. HAWTHORNE, formerly senior assistant to Sir William Gairdner in the University of Glasgow, and lecturer on materia medica and therapeutics in Queen Margaret College, has been appointed Medical Superintendent of the Graduates' College and Polyclinic, Chenies-street, London, W.C.

DR. ROBERT BARNES has been elected Honorary President of the Gynæcological Congress which will meet at Amsterdam in August next.

THE Royal Commission on the Metropolitan Water Supply has issued an interim report dealing with the question of inter-connexion.

QUACKS AND ABORTION:

A CRITICAL AND ANALYTICAL INQUIRY.

V.[1]

AT the opening of our inquiry into this subject we suggested that the pills and potions sold by the persons who advertised them as abortifacients or possibly as emmenagogues would divide themselves into two classes—the efficient and the non-efficient. It would perhaps have been more strictly logical on our part if we had classified them rather as those intended to be effective by the vendors and those merely designed to form part of a system of false pretences. For example, it can hardly be said that T. Ottey[2] or "Professor" Leslie[2] did not in fact (we had almost said "honestly") desire to procure abortion in the persons who bought their goods, for, apart from their amazingly frank letters, each sold concoctions of drugs which are known to have long enjoyed a reputation amongst ignorant persons as abortifacients. Savin in particular has figured in criminal trials in this country and on other occasions when the death of the person taking it has formed the subject of inquiry, and Ottey recommended the taking of his pills in quantities that would imply the absorption of twice the recognised maximum dose of savin daily for "obstinate cases" of pregnancy. On the other hand, at the trial of the Chrimes brothers it was proved that although they professed to sell an abortifacient and though their mixture was largely bought as such by pregnant women it was, and was intended by the sellers to be, perfectly ineffective in that respect. From that which follows it will be seen that none of the compounds of which we have given the analysis in these articles can fairly be said to fall in the class we originally propounded of professed and effective abortifacients. Nor can it be said that there is any drug capable of being used by quacks in the compounding of their medicines that would bring them into such a category, if by "effective" is implied certainty of effect coupled with safety to the patient. The consideration of the various mineral and vegetable products usually associated with this subject, both those we have met with and others, is nevertheless germane to our inquiry.

The action of emmenagogues and ecbolics is a difficult question to decide and one upon which very little experimental work has so far been done. The conclusions as to the action of certain drugs rest almost entirely upon clinical evidence often of very doubtful value. Emmenagogues may be defined as remedies used to produce or increase the menstrual flow. They may be divided into direct and indirect; the former are supposed to act directly upon the uterus or the nervous system in close relation to it, while the latter act by promoting or restoring the health of the body as a whole.

Indirect emmenagogues include, therefore,

Tonics, such as iron and arsenic;

Hæmatinics, especially iron; and

Purgatives, especially of the stronger kind such as colocynth, gamboge, magnesium and sodium sulphate, and aloes.

Amongst direct emmenagogues the following drugs have from time to time been included: aloes, cantharides, caulophyllin, borax, apiol, cimicifuga racemosa, potassium permanganate, manganese dioxide, myrrh, anemone pulsatilla, polygala senega, sanguinarin, pennyroyal or mentha pulegium, and senecio.

We will now consider the respective action of these drugs in detail.

Aloes apparently acts by producing congestion of the large intestine and of the pelvic organs. It is said to have a direct effect upon the uterus but there is no exact evidence of this.

Cantharides has less effect upon the genito-urinary organs of women than upon those of men. It has no special effect upon the uterus, but has, however, caused abortion in large doses, although one drachm has been taken by a pregnant patient with no effect. It would produce abortion only in large doses and then only by its action as an irritant poison. We have not been able to find any experimental evidence as to its abortifacient powers.

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[1] Articles I., II., III., and IV. were published in THE LANCET of Dec. 10th, 17th, 24th, and 31st, 1898, respectively.

[2] See article II., THE LANCET, Dec. 17th, 1898, pp. 1652 and 1653.

Caulophyllin, from Caulophyllum thalictroides, a resinoid powder obtained from the root.—This principle is said to have a direct influence upon the uterus or upon the motor nerves supplying the uterus. It has been used in America for the purpose of producing abortion with apparent success. The dose of caulophyllin is given in Martindale's Extra Pharmacopœia as from 1 to 4 grains, but the dose necessary to procure abortion is not definitely known.

Borax.—This is used clinically for amenorrhœa, but no evidence exists of its possessing a definite effect upon the uterus.

Apiol.—The neutral principle of petroselinum sativum or common parsley has a decided action as an emmenagogue. In doses of from 3 to 5 minims three or four times a day it is said to have no abortifacient effect whatever. Perhaps larger doses might produce such an effect.

Cimicifuga racemosa.—This drug is said to act upon the uterus and to cause uterine contraction, but we have been unable to find any experimental evidence in support of this. It has been used to promote contraction of the uterus and to hasten expulsion of the placenta. It might help to produce abortion.

Potassium permanganate and manganese dioxide.—The clinical evidence as to the value of these salts as emmenagogues is conflicting. In ordinary doses they do not tend to produce abortion. Cases of abortion occurring after the administration of potassium permanganate are recorded, but it is doubtful whether this result was not due to the general condition of the patient apart from the drug.

Myrrh.—This is said by Cullen to act directly upon the uterus, but Sydenham denies this. If it has any action it is feeble and probably indirect rather than direct. It acts as a stomachic tonic. We have not found any experimental evidence as to its abortifacient or emmenagogic powers.

Anemone pulsatilla.—There is clinical evidence to show that this drug is useful in amenorrhœa. It has an irritant effect upon the kidneys and digestive tract.

Polygala senega.—This is used in the United States as an abortifacient apparently with success. But the dose is uncertain and there is no definite evidence either clinical or experimental as to its action upon the uterus.

Sanguinarin.—A resinoid powder obtained from the bloodroot (sanguinaria canadensis). This is said to be an emmenagogue.

Pennyroyal, mentha pulegium.—This is a popular emmenagogue and abortifacient but is, we believe, never used at the present day by medical men.

Senecio.—According to Fothergill and Murrell this drug is an emmenagogue but not an ecbolic, at any rate in ordinary doses. It has a definite action in cases of amenorrhœa.

Conclusions as to emmenagogues.—There can be no doubt that some drugs possess an emmenagogic action, but exact evidence as to this is wanting in the great majority of drugs with such a reputation. Amongst the most efficient are potassium permanganate, manganese dioxide, caulophyllin, pulsatilla, aloes, borax, senecio, and myrrh either alone or combined with iron. Abortion has followed the use of cantharides, caulophyllin, cimicifuga racemosa (?), potassium permanganate, senega, and pennyroyal (?). It is quite possible that any one of these drugs in large doses might cause abortion in a person predisposed to it, but there is no evidence to show that except in excessive doses they will cause abortion in a healthy woman. Of the indirect emmenagogues only the powerful purgatives are likely to produce abortion, and that through causing congestion of the pelvic organs and possibly from the causation of minute hæmorrhages in the mucous membrane of the uterus owing to the straining which they cause.

Ecbolics may be defined as drugs increasing the expulsive power of the uterine muscle. Commonly included amongst this class are ergot, hydrastis canadensis, ruta, juniperus sabina, quinine, and sodii salicylas, although this is rather an emmenagogue than an ecbolic.

Ergot.—As to the action of ergot there can be no doubt that it is a *true ecbolic*. The action upon the muscular tissue is mainly due to the cornutine and sclerotic acid it contains. It produces powerful uterine contractions and although it acts best when uterine action has started, yet given in a fair dose at the time when the menstrual periods should occur it would be likely to initiate uterine action and so in a case of pregnancy would act as an abortifacient.

Hydrastris canadensis.—This causes contraction of the peripheral blood-vessels and acts upon the uterine muscular tissue. It has a direct effect upon the muscular fibres of the uterus due to the hydrastine or hydrastinine it contains. In one case 17½ grammes of hydrastine in five days brought on labour at the seventh month. It is of very little use as an emmenagogue but is a definite ecbolic and therefore might produce abortion.

Ruta.—There seems to be no doubt that given as infusion or as oil this produces emmenagogic and ecbolic effects, acting possibly directly upon uterine muscular tissue or through the nervous system. Experiments upon rabbits by Hamelin show this. The exact dose necessary to produce abortion in the human female is not certain. The drug is often taken as an infusion and it probably has a direct action upon the uterus and does not act merely as a gastro-intestinal irritant.

Savin, juniperus sabina.—Hamelin made some experiments on a rabbit and produced abortion without any definite suffering on the part of the animal. The rabbit, weighing 2 kilos. 300 grammes, was given in four doses on different days some 70 c.c. of an infusion of fresh savin tops and 20 minims of the oil. Another treated in the same fashion died from inflammation of the lungs and abdominal viscera without aborting. A bitch went to term without aborting, although suffering from severe gastro-intestinal disturbance produced by the drug. In this case the animal weighed 7 kilos. 500 grammes, was in the fourth week of gestation, and was given during three weeks six large doses of a fresh infusion and full doses of the oil. Savin is reputed to have an emmenagogic action, but it is exceedingly doubtful if it has any direct effect upon the uterus. It is employed as a popular abortive. In small doses it is useless, while in large doses it acts as an irritant poison. The woman may die undelivered or the fœtus may be expelled and the mother subsequently die from the effects of the drug.

Quinine.—The definite effect produced by the administration of quinine during labour is partly due to its general tonic action and partly to a direct action upon the uterus or uterine nerves. It definitely increases uterine pains but there is no evidence that it will produce abortion even when pushed.

Sodii salicylas.—This drug often causes hæmorrhages from mucous membranes and not infrequently brings on menstruation when given for rheumatism. This was definitely proved by a case which was under observation for two years. Apart from this tendency to produce hæmorrhages it has no action on the uterus and is not a true ecbolic. It might produce abortion but not with certainty.

To sum up, no single drug in ordinary doses can be said to be a certain abortifacient. Some drugs, such as cathartics, from their action upon neighbouring organs may produce abortion. Other drugs, such as cantharides and savin, only produce abortion when given in poisonous doses and by producing poisonous symptoms. Others, such as ergot, undoubtedly act upon the uterus and if taken in a number of cases will no doubt in a few set up uterine contractions and so induce abortion. The majority of so-called abortifacients are therefore uncertain in their action and their exact *modus operandi* has yet to be worked out. It may be said, however, that any pregnant woman taking a reputed emmenagogic or ecbolic drug in large or even at times in normal doses runs a risk of producing abortion, especially if she has had previous miscarriages. It is nevertheless impossible to say that any given drug in any given dose will produce abortion with certainty and therefore the production of legitimate abortion by means of drugs is never practised at the present day for this reason.

PRIZE ESSAY ON EPILEPSY.—The *Maryland Medical Journal* of Dec. 10th, 1898, states that the President of the board of managers of Craig Colony, New York, offers a prize of $100 for the best contribution to the pathology and treatment of epilepsy, originality being the main condition. The prize is open to universal competition, but all manuscripts must be submitted in English. All papers will be submitted to a committee to consist of three members of the New York Neurological Society and the award will be made at the annual meeting of the board of managers of Craig Colony, Oct. 10th, 1899. Each essay must be accompanied by a sealed envelope containing the name and address of the author and bearing on the outside the motto or device which is inscribed upon the essay. The successful essay becomes the property of the Craig Colony for publication in its annual medical report. Manuscripts should be sent to Dr. Frederick Peterson, 4, West Fiftieth-street, New York City, on or before Sept. 1st, 1899.

THE INFLUENCE OF SCHOOLS IN ACCENTUATING THE SPREAD OF CERTAIN INFECTIOUS DISEASES.

I.

IT is now nearly a quarter of a century ago that Mr. W. H. Power drew attention to the fact that in investigating outbreaks of diphtheria it was essential to have regard to the influences which the aggregation of children in schools might possibly exert upon the diffusion of this disease; and he at that time uttered a note of warning against the danger of attaching insufficient importance to the age distribution of diphtheria and of regarding the incidence of the disease on children of school age as a matter of school influence alone. Shortly after notice had thus been attracted to this subject both Sir Richard Thorne and Mr. Power held inquiries into outbreaks in which the evidence pointed most strongly to the conclusion that in these particular instances the public elementary schools in question had had no inconsiderable share in aiding the spread of the disease. This announcement was by no means surprising, as it seemed only in accordance with reasonable expectation that the bringing together of peculiarly susceptible material should at times result in an increased diffusion of infectious disease. It was of course recognised that these susceptible children came together on other occasions than at school, as, for instance, in their homes and at their play; but it was clear that these meetings would occur whether there were schools or not, and that the aggregation for a number of hours daily of susceptible subjects in what must certainly be termed overcrowded schools was a superadded factor which could not but have its influence for harm if the well-known behaviour of infectious or contagious diseases within the household still held good. Following upon these investigations there came others, and especially one relative to an outbreak of diphtheria at Pirbright in 1886, illustrative of the danger attendant upon the massing together of young children in schools. But it was not until the general increase of diphtheria in the last completed decade began to be painfully obvious that attempts were made in some degree to gauge in the bulk the mischief for which our public elementary schools might be held responsible. Here investigations were confronted with what was, and to a large extent still is, an almost insoluble problem, and it would have been altogether opposed to experience in similar cases had there not been a tendency—it may be regarded as a natural tendency—perhaps, a little to overestimate the real proportions of the case against the schools. In 1891, however, Sir Richard Thorne devoted his attention to the matter in the Milroy Lectures, and it was in these lectures that he once again drew attention to what he termed "the progressive development of the property of infectiveness," a property which is probably no mean factor in the not infrequent influences for harm of our public elementary schools. In December of the same year Mr. Shirley Murphy in his presidential address to the Society of Medical Officers of Health pointed out the very important fact that if the figures for London for the years 1860–69 be divided into six periods of five years it will be found that in spite of marked decrease in the mortality from diphtheria at all ages during the period 1870–74 as compared with that for 1865–69 the number of deaths in 1870–74 from diphtheria at school age per cent. of total deaths from diphtheria showed a very large increase; in other words, that the relative increase of diphtheria mortality at the age period 3–15 years commenced with the operations of the Elementary Education Act of 1870. And he showed that this relative increase was maintained during subsequent quinquennia. The same investigator also pointed out in his annual report to the London County Council for 1893 that the statistics of London went to show that during the summer holidays of the board schools there was, allowing for delays in recognition and notification, a reduction in the prevalence of diphtheria in the metropolis—a reduction which was marked in an especial degree at the age period 3–15 years.

In a Memorandum on Diphtheria and Elementary Schools[1] by Mr. Shirley Murphy which has just been issued the author endeavours to represent, by means of an ingenious diagram, the effect on the "All Ages" diphtheria and croup death-rate of the increased incidence of these diseases on ages 3–10 years for each quinquennial period since the decade 1861-70, and this diagram is certainly highly instructive and striking. Although we are unable to reproduce the diagram in question we furnish here the table on which it is based. It has to be added that the diagram, Mr. Shirley Murphy states, was prepared before the report to which we are referring was written, and hence the age period 3–15 years was not adopted. He, however, assures his readers that the addition of the period 10–15 years makes no material difference to the table.

Diphtheria and Croup.

Period.	"Ages 3–10."			"All ages."				Death-rate in 1861-70 taken at 100.	
	Estimated deaths assuming same proportion of deaths at ages 3–10 in 1871–75 and successive periods as obtained in 1861–70.	Registered deaths.	Excess.	Estimated deaths assuming same proportion of deaths at ages 3–10 in 1871–75 and successive periods as obtained in 1861–70.	Registered deaths.	Death-rate per million calculated on estimated deaths shown in column 4.	Death-rate per million calculated on registered deaths shown in column 5.	On estimated death-rate in column 6.	On death-rate in column 7.
1861–70 ...	4,805	4,805	—	13,031	13,031	431·7	431·7	100	100
1871–75 ...	1,776	2,273	497	4,783	5,280	284·0	313·0	66	73
1876–80 ...	1,678	2,483	805	4,491	5,296	246·0	209·0	57	67
1881–85 ...	2,426	4,019	1,593	6,503	8,096	333·0	415·0	77	96
1886–90 ...	2,468	4,505	2,037	6,696	8,733	327·0	426·0	76	99
1891–95 ...	3,412	6,870	3,458	9,320	12,778	433·0	594·0	100	139

The figures furnished in this table will convey a general idea of the influence which the London elementary schools may be reasonably considered to have exercised, first in checking a fall proper or natural to diphtheria, and subsequently in accentuating an increase of the disease brought about in whatever way. And the figures emphasise to a corresponding extent the great responsibility which rests upon those whose duty it is to control the spread of infectious disease of this class.

At an early stage of the discussion which has arisen as to "school influence" the question arose as to why, if the public elementary schools were to be held responsible for an increase of diphtheria, certain other infectious diseases should not be similarly influenced. That other infectious diseases probably were so influenced was to be expected, and outbreaks of measles in connexion with schools have often been insisted on. But it was not until Mr. Shirley Murphy set himself to inquire into the aspect of the question that any systematic attempt was made to deal with this aspect of the matter. In his annual report to the London County Council for the year 1894, as also in his presidential address before the Epidemiological Society of London in the session 1894–5, and by means of charts in the Memorandum with which we are dealing, he furnishes evidence tending to show that the tale with regard to certain other infectious diseases is not unlike that which he tells as to diphtheria, and this is more particularly the case in reference to measles and whooping-cough.

In a second article we shall endeavour to show that certain of the remarkable facts already referred to have not been confined to London alone but that they have been experienced also by other large towns and we shall have occasion to refer to the manner in which Mr. Shirley Murphy disposes of some of the arguments which were raised by Dr. W. R. Smith in his report to the London School Board, with which we dealt in THE LANCET of May 23rd and June 13th, 1896. In a third and last article we shall discuss certain administrative questions arising out of this important subject.

[1] London County Council Paper: Report by the Medical Officer of Health on Diphtheria and Elementary Schools, No. 399. (Price 1s.; post free, 1s. 1½d. P. S. King and Son, 9, Bridge-street, Westminster, S.W.)

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY meeting of the Council was held on Jan. 12th, the President, Sir WILLIAM MACCORMAC, Bart., K.C.V.O., being in the chair.

The Council adopted the recommendation of the Museum Committee that the first volume of the Physiological Catalogue of the Museum with coloured illustrations should be published.

It was decided to postpone *sine die* the further consideration of the question of permitting the Members of the College to wear a special gown.

The following report from the Laboratories Committee was approved and adopted:—

1. *The work on diphtheria for the Metropolitan Asylums Board. Preparation of antitoxin.*—Since Oct. 7th 1825 doses of antitoxin, each containing 2000 units, and 3547 doses, each containing 4000 units, for the treatment of diphtheria in the hospitals of the Metropolitan Asylums Board, have been supplied and all the demands fully met. During this period 17,838,000 units, or 278,718 units per diem, have been supplied, as against 11,229,000 units, or 175,453 units per diem, for the corresponding period of last year, an increase of 6,609,000 units, or 103.265 units per diem.

Since Nov. 24th 30 doses of 4000 units each have been supplied to medical officers of health according to instructions received from the Metropolitan Asylums Board.

2. *The grant from the Goldsmiths' Company.*—Under this grant 492 doses of antitoxin, containing 1,106,000 units, have been supplied to the General and Children's Hospitals in London.

3. The committee have agreed to undertake the bacteriological examination of material from suspected cases of infectious disease in the St. Giles' District Hospital for a period of six months, and if the arrangement proves satisfactory, it is proposed, at the termination of this period when the amount of work and its cost is ascertained, to enter into an agreement with the Vestry of St. Giles' District for the continuance of the work.

A report from the Discipline Committee was received and adopted. The committee had considered the letter from the President of the General Medical Council and the clauses which had been prepared for amending the Medical Acts so as to prevent persons whose names have been erased from the Medical Register for a criminal offence or professional misconduct, from using any title, diploma, or degree so long as the erasure remains in force. The committee recommended that counsel's opinion should be taken upon these clauses and their bearing upon the disciplinary powers of the Council of this College before any reply is sent to the letter mentioned.

The Council on the recommendation of the Discipline Committee decided to reply as follows to the first resolution carried at the annual meeting of Fellows and Members in November last:—

> While appreciating the congratulations of the meeting respecting the action of the Council in the matter of the Army Medical Service, the Council would point out that they do continually give their attention to remedying those abuses connected with civil medical practice which are brought to their notice and which fall within their jurisdiction;[1]

It was decided that the following reply should be given to the third resolution passed at the same meeting:—

> While not prepared to express a general opinion on the questions raised by the resolution the Council would repeat that they are willing to consider any evidence which may be submitted to them respecting the conduct of any Fellow or Member of the College in connexion with the practices therein referred to.[2]

The PRESIDENT reported that he had nominated Mr. Edmund Owen and Mr. F. Richardson Cross to represent the College at the celebration of the centenary of the Imperial Military School of Medicine at St. Petersburg.[3] A letter was read from Mr. Owen and Mr. Cross reporting their attendance at St. Petersburg, and the best thanks of the Council were given to them for representing the College on that occasion.

[1] The wording of the resolution carried at the meeting was as follows:—"That this meeting congratulates the Council on the successful results of its representations in the matter of the reform of the Army Medical Service, and trusts that it will now turn its attention towards remedying the notorious abuses which exist in connexion with civil medical practice."

[2] The wording of this resolution was as follows:—"That this meeting notes with satisfaction that the Council has at last definitely expressed its disapproval of canvassing for patients and of the employment of professional advertisements addressed directly to the lay public, and this meeting further trusts that the Council will extend its disapproval to the acting by Fellows and Members of the College as paid officials of any association which adopts these unprofessional practices."

[3] THE LANCET, Jan. 14th, 1899, p. 106.

A letter was read from Mr. F. R. Humphreys, honorary secretary of the Midwives Bill Committee, enclosing a copy of a draft bill which it is proposed to introduce next session into Parliament, stating that certain alterations from previous bills have been made in view of the requirements of the General Medical Council and asking for the active support of the College in pressing the bill upon the consideration of the Government.

The subject was referred to a committee to consider and report.

A letter was read from the honorary secretaries of the Medical Students' Association of Queen's College, Cork, asking for the consideration of the following resolution passed at a recent meeting of the Association, viz.:—

> That we respectfully ask the Royal College of Surgeons of England to recognise as an equivalent to their Second Professional Examination the Third Professional Examination of the Royal University of Ireland, so that students having passed the latter may be enabled to proceed to the Final Examination of that body.

The matter was referred to the Committee of Management.

The PRESIDENT reported that H.R.H. the Prince of Wales had signified his intention of being present on the occasion of the Hunterian Oration and Dinner on Tuesday, Feb. 14th.

The Council adopted the following report of the Committee of Management:—

> The Committee of Management have considered the communication from the medical school of St. Bartholomew's Hospital taking exception to the recent alteration in the regulations relating to the commencement of dissection after the student has received his instruction in chemistry, physics, practical chemistry, and biology, which was referred to them by the two Royal Colleges for consideration and report together with communications to the same effect which have been received from the Deans of Charing-cross Hospital and St. Thomas's Hospital medical schools and have adopted the following resolution, viz.:—That after receiving the written opinion of the several medical schools the Committee of Management recommend to the Royal Colleges that in Clause 3 on page 4 of the regulations the words between the brackets be omitted.
>
> The clause will then be the same as before the alteration.
>
> The committee also recommend that Mr. Thomas Cooke's course of operative surgery be recognised for the ensuing year.

"PUBLIC VACCINATORS AND THE NEW VACCINATION ACT."

PUBLIC VACCINATORS IN THE WEST OF ENGLAND.

FROM reports in the daily press it seems that the recent Order of the Local Government Board has given rise to much discussion and an endless variety in the scales of fees proposed and adopted by the various boards of guardians throughout the country. Neighbouring unions have come to the most opposite decisions, so that in some cases where the same man is public vaccinator for districts under two boards of guardians he will have quite different scales of fees for exactly similar work in adjoining districts. Some boards have adopted payment by mileage while others will not allow mileage under any consideration and insist upon an inclusive contract price of so much per case. Perhaps the greatest diversity exists with regard to the fee under Article III. (*a*), the minimum 1*s.* being considered in many cases to be too small for the amount of work entailed. That this is evident, we think, is proved by the number of boards of guardians who have given 2*s.* 6*d.* instead of 1*s.*

At South Molton on Dec. 15th it was unanimously resolved to adopt the committee's recommendation that the minimum fee for public vaccinators should apply to all cases within two miles of the residence of the officer and for cases beyond the two-mile radius a fee of 10*s.* for each case of successful vaccination.

At Bodmin on Dec. 24th it was resolved that the fees for successful vaccination should range from 7*s.* 6*d.* to 9*s.* for each case beyond the one-mile limit. It was further proposed that another fee of 2*s.* 6*d.* should be paid where on going to a house the practitioner, owing to the insanitary condition of the house or unhealthy state of the child, had to postpone vaccination, but this was defeated by 19 to 12 votes.

The Camelford Guardians have now come to a satisfactory arrangement whereby Mr. Jerome will receive 5*s.* for each successful case, except in the parishes of St. Breward, St. Cleather, and Davidstow, in each of which the fee is 7*s.* Mr. Wade will receive 6*s.* for cases in Tintagel and Otteram and 5*s.* for all others. As reported in THE LANCET of Dec. 24th,

1898, the minimum scale had been carried by 14 votes to 12, the acceptance of which the medical officers had refused.

At Helston Board of Guardians it has been reported that four of the six public vaccinators had accepted the fees offered by the board and it was expected that the remaining two would also accept. This is for twelve months. In THE LANCET of Dec. 24th, 1898, we mentioned that this board served the vaccinators with twenty-eight days' notice to terminate their contracts so as to have a free hand. Are we to assume that the fees have been accepted under compulsion?

At Tavistock on Dec. 30th the following scale of fees was adopted:—Tavistock, 6*s.* 4*d.*; Milton Abbott, 8*s.* 6*d.*; Buckland Monachorum, 7*s.*; Bere Ferrers, 6*s.* 4*d.*; Calstock, 6*s.* 3*d.*; Lewdown, 7*s.*; Whitchurch and South Lidford, 8*s.* 6*d.* The medical men met the committee but did not agree to accept these sums. It was resolved to inform the public vaccinators that the board were prepared to pay the above-named sums and that they would be glad of a reply from the medical men to the effect that they would accept the payment for twelve months, the chairman remarking that at the end of that period they would all be in a better position to estimate the value of the services rendered.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE forty-third sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Jan. 16th. The Commissioners present were the Chairman (Lord Llandaff), the Right Hon. John William Mellor, Sir John Dorington, Sir George Barclay Bruce, Mr. de Bock Porter, Mr. Robert Lewis, and Major General Scott.

At the commencement of the proceedings Mr. BALFOUR BROWNE, Q.C., on behalf of the London County Council, said that his clients had received an intimation from the secretary of the Commission that Colonel Rathborne, R.E., had been appointed as an assistant Commissioner for the purpose of aiding the Commissioners in their inquiry with reference to the relative cost of the Welsh and the Thames schemes for providing an increased supply of water for London. Mr. Balfour Browne asked on behalf of the London County Council whether it was intended that Colonel Rathborne should hold a separate inquiry or whether he would deal with the evidence which had been already given to the Commissioners.

The CHAIRMAN replied that the evidence which had been given was conflicting. Colonel Rathborne was appointed in order that he might criticise and compare the figures which had been presented to the Commissioners. This task was one of infinite detail and considerable labour and the Commissioners intended to refer the examination of the estimates to Colonel Rathborne who would be ready to hear any explanations which the witnesses of the County Council or the metropolitan water companies might wish to lay before him for the elucidation of the estimates which they had put in.

Mr. BALFOUR BROWNE suggested that it seemed to him that it would practically amount to beginning the inquiry over again in so far as it concerned the comparative merits of the Welsh and the Thames storage schemes.

The CHAIRMAN pointed out that the Commissioners had decided that Colonel Rathborne should take into consideration the evidence which had been already given and that should he require any explanations on particular points he would question the persons who had given the evidence for their elucidation, but it was not proposed that Colonel Rathborne should take fresh evidence.

Mr. BALFOUR BROWNE said that he objected to the course which was proposed and pointed out that the scheme of the County Council for bringing water from Wales to London was now submitted to Parliament and that it would be for Parliament to determine as to the merits of the scheme. Under these circumstances he would deprecate any anticipation of the action of Parliament by a report on the Welsh scheme by Colonel Rathborne.

The CHAIRMAN said that the inquiry before Parliament would not be in any way prejudiced by the action which the Commissioners had taken. It was necessary for them to make up their minds on the merits of the estimates which had been submitted to them and they had therefore found it necessary to call in an expert to assist them in making the inquiry. The inquiry was not a new one and the assistant Commissioner was appointed for the purpose of sifting the conflicting and very embarrassing figures which had been laid before the Commissioners.

Mr. BALFOUR BROWNE on behalf of the London County Council said that he did not think that they would wish to submit their witnesses to examination by Colonel Rathborne.

The CHAIRMAN pointed out that it was open to the County Council to take whatever course they might think fit.

Mr. POPE, Q.C., on behalf of the metropolitan water companies, said that they had not the slightest objection to the course which the Commissioners had proposed.

The witnesses examined at this sitting were Mr. CHARLES HAWKSLEY and Mr. E. W. EATON. In the course of his examination the CHAIRMAN pointed out to the former witness the great advantages of the use of the words "yes" and "no" in giving affirmative and negative replies respectively to questions that were asked him and that if the witness were unable to answer a question it would save time if he would at once say that he did not know. The witness did not act in accordance with these suggestions.

Mr. HAWKSLEY contended that the charges for high service made by the metropolitan water companies compared favourably with those made by local authorities throughout the country and submitted a table which he had made giving the water rents charged in the case of certain selected provincial towns and a table showing the water rents charged by the metropolitan water companies. With regard to the question of the introduction of constant supply the witness contended that it had a tendency at first to increase the consumption of water, but that when constant service was completely established the companies would be able to devote their energies to the prevention of waste, and he gave it as his opinion that they would be able to reduce the amount of waste to such an extent that the supply per head would not amount to more than an average of 25 gallons per day. In fifteen of the largest towns in England where the corporations had reduced the amount of water wasted to a minimum the average supply per head was 28½ gallons, and of this amount 10½ gallons were supplied by meter and 18 gallons only were used for domestic supply per head. The witness contended that the London water companies were at the present time under more stringent control than the water companies in other places and in his opinion the only alteration which he could suggest as a reasonable additional measure of control was that the water examiner appointed by the Local Government Board should have the right to enter the companies' works when he pleased and that his visits should not be as at present subject to the permission of the water companies. The witness said that he believed that private companies managed water undertakings better than public authorities and he thought that no advantage would obtain to the ratepayers and water consumers if the undertakings of the companies were transferred to a public body. He thought that they would suffer a loss by such a transfer because they would have to provide a sinking fund. The witness said that as a rule he did not advise local authorities to take over water undertakings, but he admitted that he had generally been employed by water companies in cases in which it was proposed that their ventures should be taken over by some public authority.

Mr. E. W. EATON said that in his opinion it was a waste of the resources of the Thames to allow 200,000,000 gallons a day to pass over Teddington Weir. He contended that if only 100,000,000 gallons daily were allowed to pass over the weir there would be quite enough water to provide for the navigation of the river. He suggested that tidal water could if necessary be ponded at Richmond Lock at high tide and be used for flushing the course of the river at low water. He suggested that it would be well to gauge the amount of water at Teddington.

The CHAIRMAN said that the Commissioners wished that the evidence tendered by the companies should be kept within reasonable limits. The Commissioners would be glad to hear the scientific witnesses' evidence to show how filtration could be so improved as to exclude bacteria. The views of scientific witnesses on other points were already before them in their published reports. He hoped that the Commissioners would be able to take all the necessary evidence in the course of four more sittings.

The forty-fourth sitting of the Royal Commissioners was

held at the Guildhall, Westminster, on Tuesday, Jan. 17th, at which Sir William Crookes, Professor Dewar, and Sir Edward Frankland gave evidence.

A SCHOOL OF TROPICAL MEDICINE.

WE have been requested by the Secretary of King's College to publish the following letter from the Secretary of State for the Colonies to the Principal of King's College:—

[COPY.]

Downing-street, Jan. 7th, 1899.

SIR,—I am directed by Mr. Secretary Chamberlain to inform you, with reference to the letter from this office of Dec. 23rd last, that he has carefully considered your letters of Nov. 22nd and Dec. 5th and their enclosures and that he has come to the conclusion that in selecting candidates for the Colonial Medical Service preference should be given (other things being equal) to those doctors who have received such bacteriological or similar special training as King's College provides, but that when candidates have been definitely selected they should be required to attend at the School of Tropical Medicine which is being established at the Albert Docks Branch of the Seamen's Hospital and to go through the complete course of instruction which is now being settled by a special committee of experts appointed for the purpose.

2. Mr. Chamberlain considers this arrangement to be the one best suited to the requirements of the Colonial Medical Service, and he trusts that the medical authorities at King's College will coöperate as far as possible in giving effect to it.

3. Mr. Chamberlain desires me to express his thanks to you and to Professor Crookshank for the great interest which you have shown in this scheme for extending the study of tropical medicine and also for the suggestions which you have been good enough to put forward.

I am, Sir, your obedient servant,

(Signed) H. BERTRAM COX.

The Principal, King's College.

THE (EAST) SUBURBAN MEDICAL PROTECTION SOCIETY: ACTION CONCERNING MEDICAL AID SOCIETIES.

THE annual meeting of this society was held at the West Ham Hospital on Jan. 12th. Representatives were present from all the districts, including Wood Green, Walthamstow, Forest Gate, Canning Town, Plaistow, and Wanstead. The annual report, a copy of which had been sent to every practitioner, was taken as read. The appointment of a collector to look personally after the debt collecting department was announced, but the amount of commission to be paid to him could not be determined until it was ascertained how far members intended to avail themselves of his services.

The following motion, proposed by Mr. Treston and seconded by Dr. Hamilton, was carried with one dissentient:—

That a majority of the council shall have power to expel from the council any member proved guilty to their satisfaction of (1) habitually charging a less fee than 1s. for a consultation at the surgery or 1s. 6d. for a home visit or 15s. for a confinement; or (2) holding an appointment as medical officer to a medical aid society not approved by the council.

With reference to medical aid societies the secretary explained that as the first result of their deliberations the medical aid sub-committee, and on their preliminary report the council also, had come to the firm conviction that the best and first step to take in the matter was for the society to establish a public medical service in connexion with the society to be managed on similar lines to those already existing at Eastbourne, Bexhill, Cork, Brussels, and further mentioned that the sub-committee had already considered a preliminary set of rules. But these it was found on further consideration would need a vast amount more consideration which neither they nor the officers of the society were prepared to give unless they knew that the principal was approved and permission obtained from the general meeting to start.

It was proposed by the honorary secretary of the council and seconded by the honorary secretary of the sub-committee:—

That the Executive Council be empowered to draw up a scheme for a public medical service according to the memorandum of association and to allow the same to be started and carried on by the members and branches after approval by the council.

The proposition was carried, one vote being recorded against it. The proceedings then terminated with a vote of thanks to the President.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6580 births and 3995 deaths were registered during the week ending Jan. 14th. The annual rate of mortality in these towns, which had been 19.1 per 1000 in each of the two preceding weeks, declined again last week to 18·3. In London the rate was 18·0 per 1000, while it averaged 18·5 in the thirty-two provincial towns. The lowest death-rates in these towns were 11·0 in Brighton, 11·8 in Derby, 12·6 in Cardiff, and 12·9 in Leicester and in Hull; the highest rates were 22·4 in Manchester, 22·5 in Gateshead, 23·2 in Oldham, and 24·0 in Sunderland. The 3995 deaths in these towns included 352 which were referred to the principal zymotic diseases, against 404 and 367 in the two preceding weeks; of these 94 resulted from whooping-cough, 85 from diphtheria, 68 from measles, 43 from "fever" (principally enteric), 34 from scarlet fever, and 28 from diarrhœa. The lowest death-rates from these diseases were recorded in Newcastle-upon-Tyne, Cardiff, Croydon, and Bradford, and the highest rates in Leeds, Norwich, Nottingham, and Birkenhead. The greatest mortality from measles occurred in Bolton, Salford, Gateshead, and Nottingham; from scarlet-fever in Swansea; from whooping-cough in Huddersfield, Swansea, and Bristol; and from "fever" in Bolton. The 85 deaths from diphtheria included 34 in London, 8 in Leeds, 5 in Liverpool, 4 in West Ham, 4 in Sheffield, 3 in Portsmouth, 3 in Norwich, and 3 in Nottingham. No fatal case of small-pox was registered last week in any of the thirty-three large towns, and only 1 case of small-pox was under treatment in the Metropolitan Asylums Hospitals on Saturday last, Jan. 14th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on the same date was 2777, against 2939 and 2912 at the end of the two preceding weeks; 220 new cases were admitted during the week, against 221, 225, and 291 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 306 and 365 in the two preceding weeks, were 363 last week, and were less than half the corrected average. The causes of 50, or 1·3 per cent., of the deaths in the thirty-three towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Bradford, Leeds, Hull, and in seventeen other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Liverpool, Preston, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18·2 and 21·3 per 1000 in the two preceding weeks, further rose to 21·7 during the week ending Jan. 14th, and was 3·4 per 1000 above the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·7 in Greenock and 14·9 in Paisley to 26·3 in Edinburgh and 32·1 in Perth. The 663 deaths in these towns included 35 which were referred to whooping-cough, 13 to diarrhœa, 12 to scarlet fever, 11 to measles, 11 to diphtheria, and 6 to "fever" (principally enteric). In all, 88 deaths resulted from these principal zymotic diseases, against 58 and 78 in the two preceding weeks. These 88 deaths were equal to an annual rate of 2·9 per 1000, which was 1·3 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had been 14 and 20 in the two preceding weeks, further rose to 35 last week, of which 19

occurred in Glasgow and 10 in Edinburgh. The 12 deaths referred to scarlet fever were within one of the number in the preceding week, and included 5 in Glasgow, 4 in Edinburgh, and 2 in Greenock. The fatal cases of diphtheria, which had been 3 and 9 in the two preceding weeks, further rose to 11 last week, of which 4 occurred in Glasgow, 2 in Edinburgh, 2 in Aberdeen, and 2 in Leith. The 11 deaths from measles exceeded by 2 the number in the preceding week, and included 4 in Aberdeen and 3 in Glasgow; and of the 6 deaths referred to different forms of "fever" 2 were recorded in Aberdeen and 2 in Glasgow. The deaths from diseases of the respiratory organs in these towns, which had been 110 and 123 in the two preceding weeks, further rose to 156 last week, and almost corresponded with the number in the same period of last year. The causes of 26, or nearly 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 27·7 and 26·7 per 1000 in the two preceding weeks, rose again to 27·1 during the week ending Jan. 14th. During the past four weeks the rate of mortality in the city has averaged 26·7 per 1000, the rate during the same period being 18·1 in London and 22·2 in Edinburgh. The 182 deaths registered in Dublin during the week under notice showed an increase of 3 upon the number in the preceding week, and included 10 which were referred to the principal zymotic diseases, against 9 and 13 in the two preceding weeks; of these, 3 resulted from whooping-cough, 3 from diarrhœa, 2 from diphtheria, 1 from scarlet fever, and 1 from "fever," but not one either from small-pox or measles. These 10 deaths were equal to an annual rate of 1·5 per 1000, the zymotic death-rate during the same period being 1·5 in London and 3·7 in Edinburgh. The fatal cases of whooping-cough, which had been 4 and 6 in the two preceding weeks, declined again to 3 last week. The 2 deaths referred to diphtheria exceeded the number in any recent week, while the mortality from whooping-cough showed a marked decline from that recorded in the preceding week. The 182 deaths in Dublin last week included 30 of infants under one year of age and 48 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons exceeded those recorded in the preceding week. Six inquest cases and 7 deaths from violence were registered; and 60, or nearly a third, of the deaths occurred in public institutions. The causes of 16, or nearly 9 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are announced:—Fleet Surgeons: S. F. Hamilton to the *Jupiter*; J. L. Sweetnam to the *Unicorn*; and J. Dudley to the *Vivid*, additional for Devonport and Keyham Dockyard. Staff Surgeons: H. R. Osborne to the *Pembroke*, temporarily; P. E. Maitland to to the *Raleigh*; C. Strickland to the *Volage*; J. W. O. Underhill to the *Medea*; and Daniel J. P. McNabb to the *Northampton*. Surgeons: Harold Huskinson to the *Pembroke*, additional for disposal; John A Keogh to the *Calliope*; Eric D. Macnamara to the *Jupiter*; Arthur A. J. McNabb to the *Sans Pareil*; Norman L. Richards to the *Northampton*, additional for the *Curaçoa*; and Samuel H. Facey to the *Diadem*. Surgeon and Agent: C. A. Lapthorne at Littlehampton.

ROYAL ARMY MEDICAL CORPS.

Captain R. J. Copeland joins at Woolwich for duty. Captain Austin is transferred from the Sind to the Poona District, and Captain W. J. Taylor from the Bombay to the Mhow District. Captain G. T. Rawnsley has embarked for India. Captain J. Thomson is posted to Western Heights, Dover, for duty. Major George W. Brazier-Creagh is seconded for special extra-regimental employment.

INDIA AND THE INDIAN MEDICAL SERVICES.

Lieutenant-Colonel W. J. Charlton, R.A.M.C., is appointed to officiate on the Administrative Medical Staff of the Army with the temporary rank of Colonel. Captain J. G. Hubert is appointed to be Personal Assistant to the Principal Medical Officer, Bengal Command, vice Captain R. H. Maddox, whose services have been transferred to the Civil Department for civil employment. Captain W. G. Beyts, R.A.M.C., is appointed Surgeon on the Staff of His Excellency the Commander-in-Chief in India. Major R. W. Wright., R.A.M.C., on his arrival in India will be posted to the Bengal Command for a tour of service.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant Arthur Peel Nuttall, 1st Volunteer Battalion the Lancashire Fusiliers, to be Surgeon-Captain.

VOLUNTEER CORPS.

Artillery: 4th Durham (Western Division, Royal Artillery): Surgeon-Lieutenant H. H. Gourley to be Surgeon-Captain. 2nd Middlesex: Surgeon-Major A. H. Robinson resigns his commission; also is permitted to retain his rank and to continue to wear the uniform of the corps on his retirement. 1st Newcastle-on-Tyne (Western Division Royal Artillery): Surgeon-Lieutenant J. D. Farquharson to be Surgeon-Captain. *Rifle:* 3rd Volunteer Battalion (the Duke of Wellington's) West Riding Regiment: Surgeon-Lieutenant Harold Hebblethwaite resigns his commission and is appointed Lieutenant. 1st Cinque Ports: Edward James Deck to be Surgeon-Lieutenant.

VOLUNTEER MEDICAL STAFF CORPS.

The Woolwich Company: John Arthur Pope Lockett to be Surgeon-Lieutenant.

GOOD SERVICE PENSION.

Deputy-Surgeon-General Sir Robert Jackson, K.C.B., on the retired list of the Army Medical Staff, has been awarded a good service pension of £100 per annum. This officer has had a long and distinguished military career as may be seen from his record of services. He entered the army in 1854 and retired with the rank of Deputy-Surgeon-General at the end of 1882. He served with the 90th Light Infantry in the Crimea from Dec. 5th, 1854, including the siege and fall of Sebastopol (medal with clasp and Turkish medal); served in the Indian Mutiny in medical charge of a battalion at the relief of Lucknow by Lord Clyde; was present at the battle of Cawnpore on Dec. 6th, 1857; with Outram's force at the Alumbagh, assault and capture of Lucknow; in medical charge of the camel corps at the assault and capture of Calpee (medal with three clasps); accompanied Sir Garnet Wolseley to the Gold Coast in September, 1873, and served throughout the Ashantee War of 1873–74, including the capture of Coomassie (mentioned in despatches, C.B., and medal with clasp); served in the operations against Sekukuni in 1879, including the storming of the stronghold (mentioned in despatches, medal); and served in the Egyptian War, 1882, and was present at Tel-el-Kebir (mentioned in despatches, K.C.B., medal with clasp, 3rd Class of the Medjidie, and Turkish medal).

SURGEON-GENERAL WOOLFRYES, C.B., C.M.G., M.D. ST. AND.

Surgeon-General J. A. Woolfryes is to be appointed Honorary Physician to the Queen, in succession to the late Surgeon-General A. Smith, M.D. Edin., C.B. Surgeon-General Woolfryes entered the Army Medical Service nearly fifty-two years ago and has been on active service on the West Coast and in South Africa. In 1873–74 he took part in the Ashantee War, as Principal Medical Officer during a portion of the period, and was present at the battles of Amoaful and Ordahsu and capture of Coomassie. He was mentioned in despatches, received the medal and clasp, and was promoted Deputy-Surgeon-General. In 1877–78 he was Principal Medical Officer in the Kaffir Campaign against the Galekas and Gaikas, was mentioned in despatches, and received the Companionship of the Bath. In 1879 he took part in the Zulu War, was again mentioned in despatches, received the medal with clasp and the Companionship of the Order of St. Michael and St. George.

INDIA.

The Anglo-Indian papers dated up to the end of December, 1898, contain relatively little of medical interest beyond information about the progress of epidemic plague and the proceedings of the Commission thereon; but this news has been in a great measure anticipated by telegraphic intelligence already received from India and published in this country. The *Times of India* of the 31st ultimo has, as might be expected, very full descriptions of the arrival of the new

Viceroy and of the ceremonial receptions consequent thereon together with Lord Curzon's speeches and a summary analysis of what he has written on the subject of India and Indian policy generally.

DEATHS IN THE SERVICES.

Surgeon-General James Macbeth, in Rome, in his eighty-second year. He joined the Army in 1841 and served with the 10th Foot in the Sutlej campaign of 1845–46, including the battle of Sobraon (medal with clasp). He was present at the Punjab campaign of 1848–49 and was also at the siege operations before Multan.

Surgeon-General William Pearl, I.M.S. (retired pay), on Jan. 10th, aged sixty-six years. He served in the Indian Army, retiring in 1885 as a Surgeon-General of the Madras Army.

Brigade-Surgeon-Lieutenant-Colonel Robert Pringle, I.M.S. (retired), at his residence, Blackheath, on Jan. 19th.

ARMY RECRUITS.

Speaking generally it is understood that the recruiting returns for the past year contrast favourably with those of 1897, the number of recruits that have enlisted into Her Majesty's army in 1898 having been in excess of those enlisted in the preceding year.

Surgeon-General W. Taylor (whose appointment we announced last week to Deputy Director-General), on his acceptance of the post of Principal Medical Officer in India, is succeeded by Surgeon-General H. S. Muir, and Surgeon-General W. S. M. Price takes the place of Surgeon-General Muir who is to act as Principal Medical Officer with the British Forces in Egypt.

It has been decided that the medical officers of the Household Troops are to retain the titles they held before the issue of the Royal Warrant constituting the Royal Army Medical Corps.

Surgeon-General Harvey, Director-General of the Indian Medical Service, proceeds to Burma during the present month on his tour of medical inspection.

Correspondence.

"Audi alteram partem."

"POISONING BY BROMOFORM."

To the Editors of THE LANCET.

SIRS,—Such untoward effects as are reported by Mr. Harold W. Evans in THE LANCET of Jan. 14th and by your Manchester correspondent in THE LANCET of Dec. 31st, 1898, will cause practitioners to hesitate before they prescribe bromoform for cases of whooping-cough. I believe, however, that such accidents can be easily prevented and that they almost always depend on the imperfect suspension of the drug in an emulsion and its concentration in the last dose of the bottle. In the *Practitioner* of February, 1893, I recorded some observations on 30 cases of whooping-cough treated with bromoform and a continued use of the drug has confirmed the belief that it controls the symptoms and course of the disease more distinctly than any other remedy.

In 3 cases I have met with symptoms of bromoform poisoning. In the first there were loss of consciousness, stertorous breathing, small pupils, and a weak irregular pulse, as described by Mr. Evans, and as in his case recovery followed the use of the stomach pump. In my other 2 patients the symptoms were less pronounced and resembled intoxication; the children were drowsy, incoherent in their speech, and uncertain in their gait. In all 3 cases it was the *last* dose in the bottle that had affected the children unfavourably, which again coincides with Mr. Evans's experience. For the last four years, therefore, whenever I have prescribed bromoform in mucilage and water the simple expedient has been adopted of always directing the mother to throw away the last dose in the bottle and during this time no further mishap has occurred. Though in out-patient practice the drug has been dispensed in this way, for private patients I prefer to let the nurse have the pure drug, instructing her to measure each dose separately from a drop-bottle and administer it in half a teaspoonful of glycerine. Children take bromoform in either of the above forms better than when it is dissolved in spirit. If allowance is made for the difficulty of properly suspending this heavy liquid it can, I believe, be given with perfect safety and will be found to distinctly lessen the number and severity of the paroxysms of coughing, to stop the vomiting and other manifestations of the attacks, and to minimise the dangers of the disease.

I am, Sirs, yours faithfully,

Norwich, Jan. 17th, 1899. F. W. BURTON-FANNING.

To the Editors of THE LANCET.

SIRS,—The case of bromoform poisoning reported in THE LANCET of Jan. 14th, seems to be an instance of misadventure in the use of the drug both as to dose and administration. The peculiarities of the drug should be well borne in mind both by the dispenser and the patient. In this case the drug was well guarded by its mixture with mucilage, with the evident intention of suspending the bromoform, but it should be remembered that the drug has a high specific gravity and is far heavier than either water or mucilage. Bromoform can only be temporarily suspended after agitation of its mixture which if allowed to rest permits of the drug falling to the bottom of the containing vessel. Thus unless free agitation takes place at each exhibition of a dose a dangerous mixture is left on the emptying of the bottle. For the same reason unless agitation be frequent and efficient the earlier doses would be proportionally weak as little bromoform would be suspended. In this case the effects were not observed until the last dose in the bottle had been exhibited and after a decided quantity of bromoform had been proved to be present in the stomach, as was evidenced by the syphon pump. Under these circumstances it is well to bear in mind the physical characteristics of bromoform and for every prescriber and dispenser to warn all concerned with the administration of the drug of the necessity of well and efficiently shaking the bottle before each dose is exhibited to the patient. If attention be drawn to these facts the administration of bromoform may in the future be free from any such alarming symptoms as occurred in the case narrated which unfortunately is not the first published. Bromoform may be safely given and repeated to adults and children in the form of the small capsules (each containing a ½-minim dose) as prepared by Messrs. Martindale.

I am, Sirs, yours faithfully,

London, Jan. 18th, 1899. M. BAINES, M.D. Lond.

PUBLIC VACCINATORS AND THE VACCINATION ACT, 1898.

To the Editors of THE LANCET.

SIRS,—I was greatly interested in your remarks in THE LANCET of Jan. 14th on the action of the Chesterfield guardians as I am in about the same position as the public vaccinators of Chesterfield.

In November the Edmonton guardians sent a circular to all public vaccinators stating that they had decided to pay the minimum fees; afterwards all public vaccinators were asked to meet the clerk. I was unable to attend but the clerk wrote to me stating that all had agreed to take minimum fees except four and myself. Having nearly completed forty years (three in Thanet and thirty-five here) under Poor-law the matter was of so little importance to me that I had no intention of troubling about fees, but on request I joined the four public vaccinators in a letter to the guardians asking for higher fees as we had rural districts and cases over three miles away. The answer to this was to ask us to act for six months on minimum fees; this would deprive us of the right of appeal to the Local Government Board and was not accepted. Afterwards two of the four did accept; three of us remained. At the meeting of guardians on Jan. 4th they decided to give my two friends higher fees and to myself notice to quit. On Jan. 7th I received formal notice; the post is advertised and no doubt a successor will be elected.

Before Christmas I wrote to the board stating that I should attend to the duties but should ask the Local Government Board to determine the amount of fees (Art. 5,

Sec. 1). I waited to Dec. 31st and then signed a form of contract which had been sent to me, adding a short clause relating to fees, and forwarded this agreement to the guardians on Jan. 3rd (for their meeting on the 4th) and wrote to the Local Government Board asking them to determine the amount of fees. To this letter I have had no reply. The power to refer the question of fees to the Local Government Board is intended to be a privilege; but if guardians can turn a public vaccinator out of office for using this privilege it certainly becomes a farce and most misleading. If there is any doubt about the matter would it not be as well to take a test case into court for argument?

I am, Sirs, yours faithfully,

Oak House, Enfield, Jan. 17th, 1899. J. COLLYER.

"SALINE SOLUTION IN THE HÆMORRHAGE OF TYPHOID FEVER."

To the Editors of THE LANCET.

SIRS,—In your annotation on the above subject in THE LANCET of Jan. 14th I note that you do not touch on the question of *rectal* injections of saline solution in an emergency such as you refer to. I have had one experience when as a *dernier ressort* I tried this treatment with conspicuously good results. As I have never read of, or heard of, similar cases being dealt with in this way I venture to give you a brief account of the circumstances I allude to and should be glad to hear if other cases have been reported previously. During January, 1898, a male, aged thirty-one years, whom I had under treatment for typhoid fever in a fever hospital in my neighbourhood, had repeated attacks of severe intestinal hæmorrhage, the last of which left him apparently *in extremis*, all the usual signs of immediately impending death from collapse being present. Other means of coping with the condition having been practically exhausted I ordered a pint of the ordinary strength of hot saline solution to be injected into the rectum, this having to be retained there by artificial means owing to the contractility of the sphincter ani being suspended. After several minutes had elapsed a faint indication of radial pulse became perceptible and the sphincter shortly afterwards resumed its function. All other ordinary means were then adopted to aid reaction, but six hours later I deemed it advisable to repeat the rectal saline injection with distinctly favourable results. Every care was then taken to build up the patient's strength with the gratifying result that he eventually made an excellent recovery, although for a consecutive period of seventy-two hours after his final attack of hæmorrhage his radial pulse was of such a character that it could not be recorded by ordinary methods. Unless there are objections to this method of treatment in typhoid fever which have not occurred to me it has obviously many advantages to the more cumbrous one of intravenous injection.—I am, Sirs, yours faithfully,

W. M. GABRIEL, L.R.C.P., L.R.C.S. Edin., &c.

Devonshire-street, Keighley, Jan. 17th, 1899.

THE ANNUAL MEETING OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editors of THE LANCET.

SIRS,—In Dr. Glover's valuable address to the profession which you published on Jan. 7th will be found an expression of surprise that the views of Abernethy should still prevail in the governing bodies of our corporations. This surprise is probably shared by all members of the profession who think about the matter. We know that privilege dies hard, but surely never harder than in the case of these bodies. Some fifteen years ago the Council of this College invited the Fellows and Members to attend an annual meeting to receive a report and to discuss the same. The precise object which the Council had in view when it instituted this meeting is rather hard to discover. The report is printed and published some time before the meeting and no discussion of it is allowed except in connexion with formal resolutions which must be submitted for the President's approval a fortnight previously. The meeting is only advertised in the medical journals once and that a month or more before it takes place. There can be no doubt whatever that but for the efforts of the Society of Members a quorum would not be present. It has now, in my opinion, become a question whether the Members should continue to expose themselves to this annual series of snubs. For what is the invariable procedure at and after these meetings? The President makes some more or less obvious remarks on the report. The various resolutions are then moved and seconded and, as a rule, carried unanimously. The first thing the Council does at its next meeting is to negative every one of these in order to show the Members how lightly it regards their opinions on any subject whatever. On the question of representation of Members it shelters itself behind a carefully organised vote of the Fellows, which yet failed to give a majority of the whole number against reform. The Members' own views are regarded as beneath notice, however strongly and repeatedly expressed.

The question of Medical Aid Associations affords a still more flagrant example of the way in which the wishes of Members are treated. Here is an absolutely uncontroversial subject, since the evils of these bodies are admitted by all. It is also a subject on which the Members must necessarily be better informed than the Council, composed as it is entirely of consultants. For more than two years the Council has been urged not only at the annual meetings but by memorials from all parts of the country to pass a resolution expressing its disapproval of the holding by Fellows and Members of appointments to such of these societies as adopt unprofessional practices; but out of sheer obstinacy and ignorance of the subject it refuses to take this simple step which has been found quite possible to the Irish Colleges. The Council offers instead to consider evidence which may be submitted to it as to individual cases. The value of this consideration may be estimated from its effect in a flagrant case which the Council has "considered" for more than a year without the slightest apparent result on the holder of the appointment, although the previous holder—an Irish licentiate—had been forced by the action of his College to resign. The whole correspondence, which is before me, shows the determination of the Council to shirk the point at issue. It censures advertising and canvassing by individual members, but refuses to condemn these practices when carried on in the name of a Member by a body of laymen.

THE LANCET has testified to the improved tone which has prevailed at the College meetings for some years past. We have tried the north wind of the law and the sun of moderation, but as neither has been of any effect we must consider whether there is not some other means of attaining our object, more consonant with our self respect, than by attending this annual booby-trap provided for us by the Council.

I am, Sirs, yours faithfully,

Jan. 16th, 1899. W. G. DICKINSON.

"A SUGGESTED EXPLANATION OF CERTAIN PECULIAR CARDIAC PHYSICAL SIGNS IN PHTHISIS."

To the Editors of THE LANCET.

SIRS,—With reference to cases of phthisis with peculiar cardiac physical signs in which the usual methods of physical examination yielded evidence, apparently illusive, of the heart being displaced to the right side of the chest the following report may be of interest to some of your readers.

In December, 1884, I was called to see a woman of lithæmic habit and inheritance, then about twenty-three years of age. I found her in an agony of dyspnœa with a high temperature and evidences of capillary bronchitis for which I had treated her on former occasions. The apex beat, or what appeared to be such, was below the right nipple and an area of dulness corresponding to that of the heart extended to that point from the sternal region. Later in the day Sir William Jenner saw the patient with me and expressed the confident opinion that as soon as circumstances permitted of a careful and exhaustive examination I should find evidence of a transposition of organs, including the liver, which could be none other than congenital. Three days later the apex beat was midway between the nipple line and the sternum; in four more days, the acute symptoms having abated, the heart was in the normal left position. The patient made a good recovery and is now alive and well.

I am, Sirs, yours faithfully,

Upper Brook-street, W. W. BEZLY THORNE.

MEASLES IN FIJI.

To the Editors of THE LANCET.

SIRS,—May I draw attention to a statement contained in the article in THE LANCET of Oct. 15th, 1898 (p. 1027), headed "Australia. (From our own Correspondent.) Infectious Diseases in New South Wales," of which the following is an excerpt: "Measles seems to be almost endemic. The disease is raging in all the Australian colonies and has broken out in Fiji where it is exceedingly fatal to the native population."

It is a fact that measles gained an entry into the Fijian Islands in July last, the first time since 1884; but although there have been more than 200 cases notified and verified by the medical authorities as measles since August 3rd when notification became compulsory there has not occurred a single death. As chief medical officer I hope to be able to supply the Editors of THE LANCET with a copy of the report on the epidemic of Fiji after it shall have been made public in the colony, but in the meantime I feel confident that I have only to point out the error which has crept into the Australian version of the case to ensure its correction in THE LANCET at an early date. It is, of course, well known that measles ran a very disastrous course in Fiji in the year of the great epidemic—1875. The very favourable issue of the new introduction in the present year is ascribed partly to the mildness of its type and partly to the advance in civilisation of the natives during the two decades between and to the intelligent and prompt execution of the restrictive and precautionary measures advised by the medical department.

I am, Sirs, yours faithfully,

B. GLANVILL CORNEY,
Suva, Fiji, Nov. 30th, 1898. Chief Medical Officer, Fiji.

"THE HOUSE SURGEON'S FEES UNDER THE EMPLOYERS' LIABILITY ACT."

To the Editors of THE LANCET.

SIRS,—Under the above heading you print a letter from "House Surgeon" in your issue of Dec. 17th which raises a point of some importance in connexion with the duties of medical referees under the Workmen's Compensation Act, 1897. It will not infrequently happen that workmen who are claiming compensation for their injuries will be admitted to hospitals to have their injuries treated, and it is therefore desirable to have a clear understanding whether or not a medical man representing the employers has a right to visit and examine such workmen while under treatment. Unless the point is made clear it is certain that friction is likely to arise from time to time between the officers of the hospitals and the medical referees; for this reason it will be well to refer to the Act itself to ascertain what are the powers conferred on the latter.

In Schedule I., Section (3), it is laid down that an injured workman "shall, if so required by the employer, submit himself for examination by a duly qualified practitioner *provided and paid by the employer* and if he refuses to submit himself to such examination, or in any way obstructs the same, his right to compensation ..... shall be suspended until such examination takes place."

It is the duty of the medical referee (or the employer) to give notice to the injured person of the time and place at which it is proposed to make the examination. It is clear, then, that the Act gives employers the right to appoint their own medical referees to examine claimants on their own behalf and that the refusal of a claimant to submit to an examination acts to his own detriment. From this it follows that no third person has the right to intervene between the injured person and the employer's representative in order to prevent the examination unless it be by the wish and consent of the injured person himself. Your correspondent, "House Surgeon," could not, therefore, legally refuse access on the part of the employer's medical referee to the person claiming compensation for injury, though he was not expected to furnish information himself.

Since the Act has come into force employers have in numerous instances combined in groups to form mutual insurance societies to cover their risks, and these societies have appointed their own referees who are paid for their examinations and reports according to a scale agreed upon or by salary. Under the Act these referees have all the rights of access to persons claiming compensation that are conferred on the Home Office referees to whom a matter under discussion would be referred by a county court judge or arbitrator. It does not appear that a house surgeon or other hospital officer can claim a right to furnish a report and be paid for it in place of the employer's chosen representative any more than he can claim to act in the place of the Home Office referee. The proper course on occasions such as that described by "House Surgeon" would appear to be for the medical referee to inform the surgeon under whose care the injured person has been placed in the hospital (or failing him the house surgeon) that he has been instructed to make the required examination and to obtain his acquiescence which would doubtless as a rule be courteously granted if the matter is properly put. It would be well, however, that hospital residents who may not be conversant with the provisions of the Act should be informed that it is *ultra vires* on their part to refuse admittance to an employer's medical referee if he is able to produce his credentials.

I am, Sirs, yours faithfully,

HERBERT G. COOK, M.D. Lond., F.R.C.S. Eng.,
Assistant Surgeon, Cardiff Infirmary.

IRRIGATION IN SUPPURATIVE OTITIS MEDIA.

To the Editors of THE LANCET.

SIRS,—If I ask once more for a portion of your valuable space it is because the treatment of middle ear suppuration is a matter of present interest to many medical men and because the results of treatment have persuaded me that the exponents of the so-called "dry treatment" are wrong in condemning the use of the syringe. Quite recently Dr. Goldstein of St. Louis has written an article for the *Laryngoscope* in which he makes some extraordinary statements. He says: "In the therapy of the middle ear suppuration we aim to remove pus from the infected cavity and this purpose is certainly thwarted by the liberal use of the syringe." I do not think many surgeons will accept such a conclusion. Our aim should certainly be to remove poisonous germs from the ear, but the mere removal of pus will not effect this. In the early stages of treatment I consider it essential to encourage a free discharge from the ear, for by this means, and by this means only, can the tissues clear themselves of the poison. Hot solutions are invaluable in arousing the dormant vitality of the tissues. In the later stages I employ dry treatment as much as anyone, but without a preliminary course of antiseptic irrigation dry treatment will effect few permanent cures. I have found the Higgenson syringe a most valuable agent and by its means I can certainly cleanse parts that are out of reach of Dr. Goldstein's probe. The ordinary brass syringe is a more dangerous weapon and requires careful handling; as for the glass aural syringe of the chemist it is practically useless.

Few surgeons would think of treating a poisoned wound with dry dressings in the early stages. Some years ago one of our house surgeons treated all his cases of damaged fingers with dry antiseptic dressings. The result was they were constantly being admitted to the hospital with cellulitis of the hand and arm. This gentleman had been impressed with the splendid results under dry dressings of aseptic operation wounds and expected a similar result in the filthy wounds from the workshop. I think the condition of the tissues is more important than the kind of dressing and the first consideration in the treatment of a poisoned wound, as of a poisoned ear, is to get the poison out. Furthermore, I would remind Dr. Goldstein that in the worst class of cases there is practically no discharge at all. Here there is no choice to the surgeon: he must irrigate and frequently if he is to do any good. Possibly much of the doubt that still remains as to the value of irrigation is due to the fact that it very seldom gets a fair trial and that weak solutions of small antiseptic value are too often relied upon.

Long ago I discarded solutions of boric acid, and I now get good results with silico-fluorides which I prefer to mercurials, as there are objections to the latter. Two years ago I expressed in THE LANCET my belief that mercurial poisons have a poisonous effect on the tissue cell as well as on the germ and I find that I am not alone in this belief. Excellent as mercurial dressings are outside a wound I am careful not to irrigate with mercurial lotions when my object is to

encourage tissue vitality. Dr. Goldstein goes on to say that "there is danger in the free use of the syringe in forcing some of the fluids into contact with the remote and healthy areas of the tympanic cavity and thus carrying fresh infection to another point." Now this danger of infecting healthy areas is an objection to the use of the chisel or the burr, but I do not think it applies to the proper use of the syringe. In long-standing cases—for to such I must be understood to refer—there is no part of the middle ear that can be said to be uninfected and yet open to the gentle force of an irrigating fluid, but there are certainly grave objections to the frequent use of the probe in the early stages of treatment. I have certainly never seen extension of mischief after irrigation, nor have I ever failed to note improvement. I doubt if dry dressing *per se* will ever give so good a result. And I do not think the mastoid operation has as clean a record. The importance of the subject must be my excuse for this little protest. The multitude of neglected cases of otorrhœa remain a reproach to the profession at the close of the nineteenth century.—I am, Sirs, yours faithfully,

F. FAULDER WHITE, F.R.C.S. Eng.,
Honorary surgeon to the Coventry Hospital and to the Ear and Throat Department.

Jan. 16th, 1899.

"THE TOPICAL USE OF QUININE IN LEUCORRHŒA."

To the Editors of THE LANCET.

SIRS,—Dr. W. W. Hardwicke has done good service in bringing to notice the value of quinine in leucorrhœa and some uterine affections.[1] I can confirm his observations very confidently, having employed hydrochloride of quinine in all cases of leucorrhœa, granular erosion of the cervix, and in all forms of vaginitis and septic endometritis for a period of eight or nine years. Its action is admirable, this salt of quinine being powerfully antiseptic (*vide* Martindale's Extra Pharmacopœia) and mildly stringent. As an intra-uterine douche in septic endometritis it is very prompt in effect and perfectly unirritating. For vaginal use I have employed pessaries of 2 gr. or 3 gr. of the hydrochloride in glyco-gelatin medium, one-drachm or two-drachm size, the glyco-gelatin being made with hazeline (ext. hamamelidis liq.) instead of water. Such pessaries, especially the larger, reduce uterine congestion and cause a remarkable contraction of a flaccid vagina, so that after a few days of their regular introduction at bedtime it is sometimes necessary to employ a smaller speculum for examination. Hydrochloride of quinine is soluble 1 in 36 of water. For douching a grain to the ounce of warm boric acid solution answers well, as also for washing out the bladder. Four grains to the ounce with a little cocaine in boric solution makes a good urethral injection and may be used at the very earliest stage of gonorrhœa. From two to four grains to the ounce of the same salt in boric solution, with or without cocaine as required, is in my experience by far the best lotion for ophthalmia neonatorum and gonorrhœal ophthalmia and also for ulcers following hypopyon. Quinine is now sufficiently cheap to allow of its liberal adoption as an antiseptic in suitable cases, but steel instruments should not be soaked in it.

I am, Sirs, yours faithfully,
R. SHALDERS MILLER, F.R.C.S. Eng., &c.

Slough, Jan. 10th, 1899.

[1] THE LANCET, Jan. 7th, 1899, p. 26.

THE NEW MIDWIVES BILL.

To the Editors of THE LANCET.

SIRS,—The publication of the text of the Midwives Bill of 1899 in THE LANCET of Jan. 7th affords those interested an opportunity of examining its provisions. Your attitude towards midwife legislation has been consistent throughout and during the heat of the discussion on the Bill of 1898 you did not fail to denounce certain of its provisions and to admit to your columns the views of both the promoters and the objectors. This being so I ask permission to point out a serious flaw or two in the present Bill which, upon the whole, is a great advance and improvement on its predecessors. In THE LANCET of Nov. 12th, 1898, pp. 1283–84, you say: "No Midwives Bill which we have yet seen contains any provision for ensuring that in every serious case a lying-in-woman, however poor, shall have the benefit of qualified medical attendance, and without such provision no Midwives Bill should pass." To this I replied on p. 1365 of your next issue and I am still of the same opinion. There appears to be a rooted objection among the promoters of midwife legislation to *strict personal supervision* of the practice of midwives by medical men and in this respect there is no improvement in the Bill of 1899. All that is there laid down (*vide* Clause 9 *et seq.*) is a general supervision by the medical officer of health or "other practitioner or practitioners." I do not hesitate to say that such "supervision" would be valueless in practice and as the Bill confers equal powers and privileges on midwives by examination and those in actual practice (who can produce a "character") it is manifest that the great bulk of the Gamp class will take out licences under the Act. In what respect therefore would the "poor" who largely employ these women benefit by the Act? There is only one way out of the difficulty and that is by creating a local supervising authority in each sanitary or Poor-law district composed of lay and medical men and women who would control the practice of both classes of midwives in the lying-in room and who would pay their medical staff for one or two visits to the parturient woman and her infant immediately after confinement. As the Bill is clearly intended to deprive the profession of its midwifery practice in addition to the reasons in its memorandum it is only fair and just to both the practitioners and their former patients to adopt this plan. This was the intention of Clause 3 of my own Bill of last year and it was the crux of the Bill drafted by Sir Blundell Maple, M.P. It would never do to leave in the licensed midwife's hands the choice of a "follower" or "consultant" as this Bill would actually do if the supervision be carried out as proposed. The most stringent set of "rules" drawn up by a central board would be helpless in this respect and the midwife would ultimately "control" her supervisor. All resident medical men who practise midwifery should be on the supervising committee and paid a small fee for their duties, otherwise the Bill, if it become law, will ruin midwifery practice and in no way benefit the "poor." The rich of course can take care of themselves.

Mrs. Garrett Anderson in your contemporary[1] curiously overlooks all this and bestows almost unqualified praise on the new Bill. Apart from what I have already said it would be intolerable to saddle one or even two or three medical men with no legal training and perhaps prejudiced in the midwives' favour with such duties as the investigation of "charges of malpractice, negligence, and misconduct," as well as powers of "suspension" in cases of infectious disease. The former are police duties and the latter would most likely displace the midwife and leave the case in the hands of the medical officer of health. I have already occupied so much of your valuable space that I will only further point out that the negative prohibition in Clause 3, Subsection 4, would not hinder the midwife from giving attendance to mother and child during the lying-in period, nor from giving information to the registrar of births and deaths which might be accepted or not by that official. This is all the more important at present as various attempts are being made by unregistered persons to override the Registration Act; and with regard to the former point it has already been claimed as part of the new midwife's duty to attend slight ailments in both mother and child after parturition.[2] It is necessary to make *positive* provision against such conduct in the Bill itself. Strict "supervision and control" are the very essence of midwife legislation and in this respect the present Bill is as faulty as its predecessors.

I am, Sirs, your obedient servant,
East Sheen, Jan. 8th, 1899. ALEXANDER MCCOOK WEIR.

[1] Brit. Med. Jour., Jan. 7th, 1899.
[2] Vide Contemporary Review, March, 1898.

"KYNOMANIA."

To the Editors of THE LANCET.

SIRS,—In the issue of THE LANCET of Jan. 14th, p. 109, I notice under the above heading the following passage: "In our opinion the state of the law as regards dangerous dogs wants altering. We believe that no dog can be considered dangerous and its owner punished should it bite anyone

unless it can be proved that the dog has bitten someone previously." It may interest your readers to know that this is not quite accurate. It was decided by the Court of Common Pleas as long ago as 1866 in the case of Worth *v.* Gilling (reported in the Law Reports, 2 C. P. p. 1), that it was not necessary to show that the dog had previously bitten another person: it is enough to show that it has to the knowledge of its owner evinced a savage disposition—e.g., by attempting to bite. It is true, however, that it is not easy to satisfy the court of the scienter of the plaintiff without proving a previous bite.

I am, Sirs, yours faithfully,

Jan. 18th, 1899. WALTER P. HART.

"OPIUM-SMOKING."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Jan. 14th Dr. Herbert Snow asks the reviewer of his book whether he can give a single instance in which a person has felt the slightest opium influence by smoking opium in any other way than with the one form of pipe perfected by generations of Chinese. I cannot, of course, answer for your reviewer, but I can for myself, and I assure Dr. Snow that if a cigarette made of good tobacco—i.e., tobacco the smoke of which can be inhaled without irritation—be dipped in an ordinary dose of laudanum—say, 20 or 30 minims,—allowed to dry, and then smoked and inhaled the smoker will feel the "opium-euphoria" in about five minutes unless, indeed, he is singularly tolerant of opium. He will also probably, if the cigarette be smoked at night, have a bad headache next morning. The same effect is produced by putting from 10 or 15 minims into a pipeful of tobacco. This at least is my own experience and that of several of my friends.

I am, Sirs, yours faithfully,

Jan. 16th. CREDE EXPERTO.

WRITER'S CRAMP.

To the Editors of THE LANCET.

SIRS,—A case presenting some unusual peculiarities has recently come under my notice and I shall be grateful for any help in arriving at the probable cause of the group of symptoms to be described.

A man, aged forty-eight years, consulted me suffering from what he thought, and was told, to be writer's cramp. In some respects his symptoms resemble writer's cramp inasmuch as there is inability to write with a pen except with great difficulty. This difficulty also is increased after any excessive exertion or unusual excitement. Here, however, the resemblance ceases. When a pencil is substituted for the pen there is comparative ease in writing and yet the same set of muscles are brought into play. In my patient's case there has never at any part of his career been any excessive use of the muscles employed in the act of writing, as is usually the case in a genuine case of writer's cramp. There is no spasmodic jerking of the thumb or finger during the attempt at writing. He has never been addicted to the use of stimulants or a heavy smoker. But the most peculiar feature in connexion with the case is the fact that every other member of the family (which numbers seven) is, with perhaps one exception, affected in a similar manner. Four sisters complain of the same train of symptoms and in their case also no direct cause is assignable. There is nothing in the family history to throw any light on the matter. Their father is living now, aged eighty-seven years, and their mother was seventy-eight years at the time of her death. With respect to treatment I may say that galvanism and massage have been tried but with no good effect. The point I wish to bring into prominence is this. If this want of coördination of the muscles used in writing is due to some morbid state of the nerve-centres is it not extraordinary that it should attack practically all the members of one family?

I am, Sirs, yours faithfully,

Jan. 16th, 1899. W.

"THE 'OPEN-AIR' TREATMENT OF TUBERCULOSIS."

To the Editors of THE LANCET.

SIRS,—It seems to me very important at the present moment to decide the question whether the proposed homes or sanatoria for the open-air treatment of tuberculosis in England or Scotland will be of any use. I acknowledge we cannot get the rarefied air and the amount of sunshine which is obtained naturally in the Engadine and that therefore we have disadvantages, but I maintain we have counterbalancing advantages of several kinds. One is that by having glass houses we have entire control of wind and temperature and complete absence of damp mist in bad weather. Next, as to purity of air. I visited some years since one of the finest hotels in the Engadine, specially advertised on account of its splendid system of ventilation, in which subject I have for many years taken great interest, and the manager was good enough to show me all the details. Pure air was brought in below ground in the neighbourhood of underground kitchens, was heated by two boilers and carried by shafts to all the bedrooms and sitting-rooms; the air from the shaft was admitted at the lower part of each room and another opening into the same shaft at the top of the room was supposed to carry away the impure air of the room. I said at once to the manager that the smell of cooking or tobacco would be carried from one part of the building to another and he answered they had found it to be so and were going to alter the system entirely.

A lady who had resided many years at another place told me that the physicians attached so much importance to fresh air that they had their patients' windows nailed open all the winter, but I am puzzled to understand how delicate persons can bear the temperature in the absence of good, wholesome, open coal fires such as we should have in England and which present one of the advantages over the Engadine where I saw nothing but closed stoves which warm one's head more than one's feet. Then we can have warm and dry air driven over hot water radiators by a fan through our glass houses and bedrooms, so that they may be kept full of pure air and at the same time comfortable; this is done at many schools, Leicester for example, so that it is practicable. In glass houses exercise can be taken at all times, and if large enough, as at Welbeck, riding exercise and tennis can be practised at all times day and night with the aid of the electric light, and glass houses appear to increase the power of the sun's rays in winter very considerably. Sydenham observed that riding exercise is a specific for phthisis. Passive exercise in the open air is one of the most important remedies for tuberculosis undoubtedly and it would be possible, I think, almost as often in our climate during the winter as in the Engadine, on account of our warmer climate. There are other points involved in this matter besides rarefied air and sunshine. One is that expressed by the medical superintendent of a sanatorium for phthisical patients in Saxony, about 1200 ft. above the sea—"the teaching of hygienic rules to patients"; another is the isolation of phthisical patients from crowded, ill-managed, damp houses so that they may not spread disease and so that they may have opportunity to recover; and a third is that not one in 10 or 20 can afford to go to the mountains, for the expense to a second-class patient at the Engadine hospitals is 25*s.* per week besides the expense of going, and even if homes were established there English people, especially the poor, would object to going so far from their friends, and thus the primary object of isolation from crowded damp homes would be defeated.

As to the purity of the air that of the German Ocean or British Channel is as pure as, or more so than, that of Davos or St. Moritz, though I believe it is not so dry. Dr. J. C. Taylor gives us for six months (October, 1886, to March, 1887) at Davos: average number of hours of sunshine per month 114·3, while in December there were only 42¼°; snow fell on 55 days and rain on 9 of the six months. The mean relative humidity was 83·1, being the mean of three daily observations. "There were 70 calm days, 57 breezy, and 55 windy and stormy; there was a total of 104 clear or sunny days and 78 more or less densely clouded." The average of three years 1886—1889 is nearly the same as the above. The mean relative humidity in our locality for the corresponding six months of 1897 was 87·5 and the average number of hours of sunshine per month 53·3, including 24 in December. The number of rainy days was 105, so that there would be 77 days fairly clear, and probably exercise in the open air could have been taken almost every day if the patients were only educated to understand that pure air is their most precious food and medicine. Dr. Taylor says: "As to myself, I suffered very much more from the cold there than in England, as did also those relations of mine who were with me and who were in good health." This agrees with my own short experience in the Engadine.

There is one very important advantage which would

obtain for sanatoria in England—occupation in gardening, especially fruit-growing, both indoors and out, could be used to assist in the cure of the disease by giving amusement, instruction, and assistance, in paying the expenses of those who were not in good circumstances, and in providing good food, and I am sure outdoor occupation in gardening is a valuable curative agent which ought to be much more used. I could say a great deal of the advantages of England over the Engadine but I fear you will consider I have already trespassed far too much on your patience.

I am, Sirs, yours faithfully,
M.O.H.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Bombay Improvement Scheme.—Italian Honours to a Medical Man.—The Plague Commission.—Plague at Gaday.

NOTIFICATION of the first schemes of the Bombay Improvement Trust have been published in the Government *Gazette* and thirty days are allowed for those having objections to lodge their protests. There are two schemes—one an improvement scheme, the other merely a street scheme. Under the first the whole area of a district called 1st Nagpada will be acquired. This is one of the most insanitary districts in the city and by the scheme it will be practically remodelled. The trustees take power to drain and light the new streets they form, to improve the drainage of the locality, and to construct within and without the area buildings for the accommodation of the poor and working classes. This area has also been one of the worst plague spots in the city. By the second or street scheme certain divisions of the city will be opened up by cutting one big main road and a series of subsidiary thoroughfares. The roads will be at least 40 ft. in width. It is understood that within a year or two important works involving an outlay of a crore and a half will have been commenced and that the expenditure will exceed five crores before the whole scheme is completed.

The Arthur-road Fever Hospital has been the resort of all the medical *savants* who have visited Bombay and the medical officer, Dr. Choksy, has had the task of receiving and explaining to all the features of the plague and other cases under his charge. He has probably had as much if not more experience of the clinical course of plague and the treatment of it than any man living. In recognition of his services to humanity and science and for the cordial assistance given to the Italian doctors he has had conferred on him the Order of Chevalier of the Crown of Italy.

The plague figures of the past week show but a small improvement. More villages have been attacked and the deaths from plague have increased in Bombay city and in Karachi, also in the Poona, Thana, and Nasik districts. In most other parts a decrease is recorded, but the figures are unreliable and it is impossible to say how much plague is raging in the remote villages. Even in Bombay the plague deaths are certainly greater than the amount published, as there is nothing special to account for the generally increased mortality. In the whole Presidency from 2500 to 3000 deaths from plague are occurring weekly.

The Plague Commission is now sitting in Calcutta. The published evidence is not very interesting as yet. Major Evans, I.M.S., resident physician at the Calcutta Medical College, referred to the incidence of plague amongst different races. He observed that during the progress of the plague in Calcutta cholera was practically absent. This has been the case also in Bombay. He thought that plague was introduced into Calcutta by goods rather than by human agency, as it would be very difficult to pass the plague observation camps undetected. Colonel Saunders, R.A.M.C., had been fourteen years in Calcutta and had never seen similar cases of plague before. He considered that segregation alarmed the people and caused them to run away. Colonel G. F. Harris, I.M.S., officiating principal of the Calcutta Medical College, said that they had no experience of the disease being transmitted from the patient to the attendant. Major H. H. R. Charles, professor of surgery and descriptive anatomy at the Calcutta Medical College, spoke of the finding of plague-infected rats and it seemed to him that these rats came from ships lying at the jetties. The first cases occurred quite close to the jetties, as was the case in Bombay. Dr. F. G. Clemow, district medical officer, gave evidence as to the methods employed for the disinfection of houses and the value of Yersin's serum, concerning which he had nothing conclusive to say from personal experience.

Plague has attacked many of the villages up country and in the remote districts it is impossible to say exactly what has happened. Many of the out-of-the-way villages in the jungle are seldom visited or reported on and the actual population is unknown. Several places along the line of the Southern Mahratta Railway have suffered severely and the present outbreak at Gaday may be taken as an example of how the epidemic has to be met by the few British existing in these parts. The police officer is the plague authority and by the exercise of a wise discretion of his powers he seems to have had a fair average of cases reported to him. The town is estimated to contain nearly 25,000 people and is divided practically into two parts, one of which has curiously "caught on" with inoculation and perhaps half its numbers have been inoculated, while in the other part where plague is now beginning to spread the inhabitants have fought shy of the operation. A hospital has been erected close to the railway and is under the charge of one of the English special plague medical officers while assisting him are two of the English plague sisters who with a hospital assistant and about eight ward boys constitute the chief staff. At present there are 36 beds but in anticipation of an increase of plague further accommodation is being provided. The camp arrangements are much the same as elsewhere, the wards being built of bamboos and grass matting. The patients can be got to take medicines but have their own relations and friends to feed and wait on them. The sisters have to see to all the dressings (there being also many out-patients), administer medicines and stimulants, and fill up the charts. They have duty of about 54 hours in the week. The accommodation provided for them is fairly comfortable, but they are lodged apart in isolated and unprotected quarters. This is very unfair and must be a cause of considerable anxiety. There may not be danger from wild animals, but dacoity is frequent in the neighbourhood and plague disturbances might occur at any time. To place English ladies on plague duty in any additional risks of this character is wholly unjustifiable. As has been said already in reference to other places, the training of the English sisters is much too good for the work. With the commencement of the outbreak dead and dying rats were found in considerable numbers and still continue to be discovered. Monkeys, cats, and squirrels in this district have also been found affected with plague. Gaday is a curious town composed almost entirely of mud huts. These are made of walls from 1 to 2 ft. thick with low, flat, mud roofs, also very thick. As everywhere else, the floors are smoothed over with cow dung and the rooms are dingy and unventilated. The people are swarthy, of low physique, and very dirty. The language is Canarese, Hindustani being understood by very few. Inoculation seems to be proceeding merrily enough, and the inoculating officer who is one of the English special plague medical officers is much occupied, 500, 600, or even 700 people being often inoculated in one day. To see the crowds waiting and struggling to pass the barrier is a strange sight. Old men and women, young children, and mothers with babes in their arms form a daily crowd numbered by hundreds who wait for hours to get their chance of the day's inoculation and many go away disappointed after the doctor and staff have been fairly tired out. The example of Hubli has apparently given the people confidence and they are now eager to bring their 2 annas to go through the operation. It is unfortunate, however, to find that many of the inoculated get plague—even those who have been inoculated twice—and several of them have died. Many cases of suppuration have also followed inoculation notwithstanding that great care is exercised in all the details of the operation. That it affords protection has now been proved, and it has been observed that plague patients who have been previously inoculated are not so subject to delirium and mental obfuscation, nor do the buboes develop so readily or so frequently go on to softening. The fever generally is not so severe and the type of the disease is less virulent. In uninoculated cases the disease continues with unabated intensity.

Dec. 31st, 1898.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The School for Tropical Diseases in Liverpool.

THE establishment of the school for the study of tropical diseases in Liverpool is making satisfactory progress. The British and African Steam Navigation Company have engaged to give an annual subscription of 100 guineas towards the fund of which notice was given in THE LANCET. In addition to the training of medical men about to proceed for service in tropical climes in the study of tropical diseases it is also contemplated to give instruction to nurses in the same direction by means of which many valuable lives would doubtless be saved.

Munificent Donations to the Proposed Sanatorium at West Kirby for Tuberculous Disease.

Lady Willox and Mr. W. P. Hartley have intimated their intention of subscribing £7500 each towards the erection of the sanatorium at West Kirby for the treatment of tuberculosis which is to contain 36 beds. The noble gifts of the generous donors are made on the understanding that they are to be an addition to and not to take the place of sums hitherto promised by others for the same purpose. The donors are also desirous that further efforts should be made to provide an adequate fund for the maintenance of the sanatorium.

The Health Committee and Vaccination Stations.

The Health Committee have communicated to the Local Government Board a report by their medical officer, Dr. E. W. Hope, stating reasons why Liverpool should receive exceptional treatment in the matter of the new Vaccination Act in the retention of its vaccination stations. The report states that the parish of Liverpool had hitherto been one of the best vaccinated communities in the country, to which circumstance was due its remarkable immunity from small-pox, and that the port of Liverpool being in direct communication with every quarter of the globe was peculiarly liable to the importation of the disease. Similar applications to the Local Government Board which were made by the select vestry and the neighbouring boards of guardians have been met by a negative reply.

The Workmen's Compensation Act: House Surgeons' Fees for Reports.

A committee has been nominated by the Liverpool Medical Institution consisting of one representative from each of the Liverpool hospitals to consider the fees to be charged by house surgeons for certificates under the Workmen's Compensation Act. In many cases of injury to the employés the house surgeons will have to deal directly with the insurance companies as the employers mostly insure against risks. As the insurance companies make large profits from these transactions it is only reasonable that they should be made to pay proper fees for reports which their own medical officers would not be in a position to furnish.

Hospital Sunday in Liverpool.

The collections on behalf of the Hospital Sunday Fund were made in Liverpool and suburbs on Sunday, Jan 8th, and hardly came up to those of last year, although the conditions of the atmosphere were more favourable this year.

Donations to the Chester Infirmary.

The executors of the late Mr. Hugh Lloyd Jones of Boughton have handed over to the managers of the Chester Infirmary £300 bequeathed by that gentleman. The late Mrs. Maria F. Hill of Wavertree has also bequeathed £100 free of duty to the infirmary.

Death of Mr. Arthur Henry Wilson, M.R.C.S. Eng.

Mr. Arthur H. Wilson, one of the honorary surgeons to the Liverpool Northern Hospital and formerly surgeon to the Stanley Hospital, died on Sunday, Jan. 15th, from endocarditis at the early age of thirty-nine years. The deceased received his medical education at the old Royal Infirmary School of Medicine and subsequently at University College, Liverpool. He won the Senior and Junior Lyon-Jones Scholarships, the Derby exhibition and also gold medals in anatomy and physiology. Much sympathy is felt for his father, Mr. C. B. Wilson, who retired some years ago from the active practice of the medical profession.

The Royal Infirmary and its Milk-supply.

The authorities of the Royal Infirmary, Liverpool, have decided to require the tuberculin test to be applied to the cows from which their milk-supply is derived.

The New Northern Hospital.

The north pavilion of the New Northern Hospital which is to accommodate the medical cases will be opened in the spring of this year. The south pavilion comprising the surgical department will not be completed until the spring of next year.

Jan. 17th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Death of Dr. James Cappie.

THE medical profession in Edinburgh has received with regret the announcement of the death on Jan. 14th after a short illness of an esteemed and respected member of its body, Dr. James Cappie. Dr. Cappie had practised in Edinburgh for almost fifty years and at the time of his death he was in possession of an extensive practice. He graduated M.D. in 1850 and shortly thereafter entered on the practice which he held until his death last week. At one time Dr. Cappie held a parochial appointment but subsequently resigned it, devoting himself latterly entirely to his practice. Any leisure time which he had in his busy life he gave to study and he was the author of several treatises on medical subjects, the chief of these being "Essays on Medical Science" (1859); "The Causation of Sleep" (1872); and "Intra-Cranial Circulation and its Relation to the Physiology of the Brain" (1890).

Dunfermline Cottage Hospital.

On the afternoon of Saturday, Jan. 14th, a fire of an alarming character occurred in connexion with the Dunfermline Cottage Hospital. The fire was first discovered about half-past two in the afternoon but it was nearly seven o'clock before it was entirely extinguished. The fire had originated near the dome surrounding the central block and the damage done to the building was extensive. The upper storey was destroyed by the fire while the wards beneath were saturated with water. The patients (29 in number) were early removed to the observation ward and to the laundry of the institution, this being effected so comfortably that apparently none of them suffered from the process of transfer. Later in the evening a number of the patients were taken back to the Moray wing which had been uninjured by the fire. At a hurried meeting of the managers held on the morning of the 15th preliminary steps were taken with regard to the repair of the damaged building.

Dundee Royal Lunatic Asylum.

At the quarterly meeting of the directors of the Dundee Royal Lunatic Asylum held on Jan. 16th it was proposed and carried that steps be taken to proceed with the erection of a new private asylum. Mr. Gilroy, who brought forward the proposal, said that it was most necessary that they should have more hospital accommodation as well as more accommodation for private patients. This could only be brought about by removing the private patients from West Green Asylum and making it a pauper asylum only. He thought it desirable that Gray House which at present is used as a private asylum be reserved exclusively for women, as they had at present many more female than male private patients.

Epidemic Hospital for the Arbroath District.

The police commissioners of Arbroath as the local authority of the burgh have by 12 to 3 votes approved of the scheme for the erection of a fever hospital for the district. The proposed site is Hercules Den on the lands of Little Cairnie. Accommodation is to be provided for 40 beds, the burgh of Arbroath taking the largest share.

Glasgow University.

The following appointments to examinerships in the faculty of medicine have been made by the University Court: Professor Geo. G. Henderson, M.A., D.Sc., West of Scotland Technical College (chemistry); J. Arthur Thomson, M.A., F.R.S.E., School of Medicine, Edinburgh (zoology); Wm. Murrell, M.D. Brux., F.R.C.P. Lond., London (materia medica and therapeutics); Alex. O. Mackellar, M.D. R.U.I., F.R.C.S. Eng., London (surgery, systematic and clinical); and J. Lindsay Steven, M.D. Glasg., Royal Infirmary, Glasgow (medicine, systematic

and clinical). All these appointments are to date from Jan. 1st, 1899, and to extend for a term of three years.—The court has expressed approval of the proposals of the General Medical Council in favour of granting penal and disciplinary powers over medical graduates.—It is intimated that Mr. W. R. Herkless is a candidate for the position of assessor representing the General Council on the University Court in room of the Rev. T. W. King, deceased.—The following free lectures are to be given during the session: The Making of a Book as Illustrated in the Hunterian Library, by Professor John Young: A Just Wage, by Professor Smart, LL.D.; Facts and Fancies about Insanity, by Dr. Yellowlees; The Modern Revival of Arabic Literature, by Professor Robertson, D.D.; and Microbes: their Place and Power in Nature and in Disease, by Professor John Glaister.

The Treatment of Juvenile Lunatics.

In the last report of the Commissioners in Lunacy attention is drawn to the erection by the Glasgow Barony Parish Council of a special house for the accommodation of juvenile lunatics. The action of the council is warmly commended and the opinion has been expressed that such patients have not hitherto received due attention from the public authorities. The Commissioners in Lunacy believe that it is impossible to properly care for juvenile lunatics in association with those of riper years.

Medical Parish Councillors.

Mr. R. Wilson Bruce, L.F.P.S. Glasg., Mr. W. Chalmers, L.F.P.S. Glasg., and Mr. Joseph Scanlan, M.B. Glasg., have been elected members of the Glasgow Parish Council. Mr. Chas. Whish, M.B. Glasg., has been elected chairman of the Pollokshaws Parish Council.

The Medical Officer of Health, Glasgow.

The Health Committee, before deciding upon the detailed rearrangements necessitated by the resignation of Dr. J. B. Russell, have requested Dr. A. K. Chalmers to prepare a report on the general work of the medical officer for the city along with any suggestions he may desire to make. The Town Council have presented to Dr. J. B. Russell, on the occasion of his retirement, an honorarium of £1000. Several members during the discussion expressed a preference for the method of a private testimonial, but in the end the council voted the sum proposed by the Health Committee.

Jan. 17th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Public Health of Dublin.

MANY efforts are just now being made by the public health and other authorities to improve the health of Dublin by means apart from the expensive and important main drainage works now in active progress. It has long been recognised that the lodgings of the very poor in Dublin—generally in half-ruined tenement houses—are sources of the origin and spread of much disease. A real effort is now being made to remedy that evil by means of an "Association for the Housing of the Very Poor, Limited," incorporated under the Companies Acts, 1862 to 1893. The directors' names are well known in Dublin, including that of Dr. Lambert Ormsby, J.P., and they state on their prospectus that they expect that 4 per cent. on the capital will be earned. His Grace the Most Rev. Joseph Peacock, D.D., Lord Archbishop of Dublin, and the Rev. J. D. Osborne, M.A., Moderator of the Presbytery of Dublin, have written letters in strong approval of the project. The Roman Catholic Archbishop, His Grace the Most Rev. Dr. Walsh, has not alone written but has applied—as has also the Right Hon. Alderman Meade, LL.D.—for 500 shares in the association.

Sir Plunkett O'Farrell.

At a meeting of the governors of the Mullingar District Lunatic Asylum held on Jan. 12th, the Right Hon. Lord Greville, D.L., filling the chair, a vote was passed unanimously to congratulate Sir Plunkett O'Farrell, M.A., M.D. T.C.D., &c., on his having recently received the honour of knighthood.

Hydrophobia in Ireland.

The muzzling order which has now been universal in Ireland for a considerable period does not seem to have been at all effectual in lessening the presence of rabies or the mortality from hydrophobia. It will be remembered that a deputation from the Public Control Committee of the London County Council waited recently upon Mr. Walter Long, M.P., and that Mr. Crooks, referring to the means for maintaining the immunity from rabies that London now happily shared with a great part of England, urged the importance of prohibiting the importation not only of foreign dogs but also of Irish dogs. Mr. Long stated *inter alia* that he was in correspondence with the Government in Ireland as to the serious extent to which that country was affected by the disease and as to the possible necessity of taking some measures to check the danger of its introduction into England from there. A letter was published in the *Irish Times* of Dec. 27th which contains some recent disquieting statistics as to the death-rate from hydrophobia which were obtained from the Registrar-General for Ireland and which dealt with the years 1894, 1895, 1896, 1897, and that of the first three-quarters in 1898. From these it appears that in 1894 there were 2; in 1895, 4; in 1896, 5; in 1997, 4; and in the first three-quarters of the present year 4 deaths were registered as due to hydrophobia, besides 1 other death which took place in the first quarter of 1898 at the Pasteur Institute but the patient was sent over for treatment from Ireland. The muzzling order now universal in Ireland is apparently insufficient to stamp out the disease.

Ambulance Display in Dublin.

Sub-committees of the Philanthropic Reform Association and of the Society of St. John of Jerusalem have been formed for the purpose of organising an ambulance display to be held at Earlsfoot-terrace on Feb. 6th and 7th. It is the first time that such an undertaking has been organised in Dublin, but Dr. Dallas Pratt, Sergeant-Major Spackman, and many others, with an energetic and popular secretary in the person of Mr. T. G. Stevens, F.R.C.S. Irel., should render it a success. Her Excellency Countess Cadogan has kindly consented to distribute the prizes.

The Belfast Water-supply at Stoneyford.

At the meeting of the Lisburn Board of Guardians held on Jan. 10th Dr. Alexander reported that he had inspected the premises of a large number of farmers in the catchment area of the Belfast water-supply at Stoneyford and found from all of them more or less pollution of the streams in their vicinity. This comes from the farmyards and manure heaps, the discharge from which empties itself directly into the stream in some instances and in others after flowing over a field, and the pollution may be greatly increased during and after rain, especially if heavy. In most cases a wall of cement or clay impervious to wet would have to be constructed round the manure heaps and the surface water would have to be diverted from them and in some cases tanks would have to be constructed for the liquid manures. The carrying out of these works would have to be done under skilled supervision. Dr. Alexander recommends that the board communicate with the Belfast water commissioners so as to have the assistance of their engineer in deciding what is best to do in each individual case and in having the work properly carried out.

Ballymena Cottage Hospital.

At the annual meeting of the supporters of this charity held on Jan. 10th it was reported that the total income was £500 and that the expenditure was £420. There had been 82 intern and 16 extern patients, making a total of 98. There were 26 operative cases. The principal feature of the year had been the building of the new operating theatre. A special vote of thanks was passed to the honorary medical staff.

Suffocation by Gas in Belfast.

Within the space of one week there have been two different cases of suffocation by gas in Belfast. One involved the deaths of a servant girl and an infant; in the second, which occurred on Jan. 10th, an aged woman (a housekeeper) and a child of her employer's, three years of age, have died. In each case there was an escape of gas either through the gas not having been properly turned off or having been turned on again by mistake. At the inquest on the second case Dr. J. Lorrain Smith (pathologist to the Belfast Royal Hospital) in his evidence gave statistics as to the composition of coal-gas and water-gas, and especially as to the amount of the deleterious material (carbon monoxide) in each and its

fatal effects. The jury in their verdict added as a rider that in the public interest the city corporation should have experiments made to ascertain the amount of carbon monoxide in the gas supplied by them to the city with the object of preventing too high a percentage if it was proved that an undue percentage did exist.

Vaccination and Small-pox in Londonderry.

At a meeting of the Londonderry Board of Guardians on Jan. 16th the Local Government Board wrote endorsing a return from Dr. Craig, dispensary medical officer of the city, to the effect that at present there were 135 vaccination defaulters in his district, and that in view of the occurrence of a case of small-pox at the County Infirmary the guardians were urged to take energetic measures to enforce compliance with the vaccination law throughout the union. It is interesting to note that the defaulters are nearly if not all parents of children of recent birth. The Government's policy in reference to the "conscientious objector" is beginning to bear fruit in Ireland.

Jan 17th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Surgery of the Stomach.

AT the meeting of the Academy of Medicine held on Jan. 10th M. Doyen said that in cases of simple pyloric stenosis or spasmodic contraction of the pylorus he had given up the operation of gastro-enterostomy and had substituted a new operation—namely, gastro-duodenostomy with transverse section of the pylorus. The operation takes about fifteen minutes to perform and gives an opening of about 40 mm. in diameter. At the end of from five to eight days the patient is able to digest different kinds of food. For gastro-anastomosis M. Doyen has invented a metal eyelet which is in many ways preferable to Murphy's button. The external diameter is the same—namely, 27 mm.—but the calibre is twice as great and the thickness of it much less. The eyelet joins the stomach to the intestine by suture and invagination at one and the same time, for the male portion which is fixed into the stomach is supplied with eight points which perforate the coats of the stomach and the intestine at the same time as they fit into the grooves of the female piece. M. Doyen showed a tumour of the stomach which had been removed by his new operation. Thanks to his method of closing the stomach and the duodenum by means of a purse-string suture M. Doyen was able to finish the operation in fifty minutes.

The Abuse of Thyroid Preparations.

M. Francois Franck together with other members of the Academy of Medicine have requested that body to stop the unrestricted sale of thyroid preparations to the public. An enormous development has recently taken place in the way in which these preparations are handed over by druggists without any prescription from a medical man to anybody who comes to ask for them. They are even advertised in the lay press and their use is by no means unattended by danger. Although their use is no doubt of great value in certain cases yet they are often employed for a variety of complaints, such as obesity, where their use becomes a veritable abuse. A point which M. Franck did not bring forward but which everybody at the Academy was aware of is that the ordinary public may become infatuated by a communication recently put forward by M. Lancereaux in which he vaunted iodothyrine as a remedy for all the troubles arising from arterio-sclerosis. M. Franck proposed that such preparations should only be dispensed by a physician's prescription. M. Huchard, M. Potain, and M. Lancereaux himself related several cases where tachycardia, shortness of breath, and even death, had overtaken patients who had taken these preparations in excess and without due consideration.

Obituary.

Dr. Dumontpallier has died at the age of seventy-four years. He was a member of the Academy of Medicine, President of the Society of Biology, an Officer of the Legion of Honour, and was for many years physician to the Hôtel Dieu. He wrote a large number of books chiefly dealing with medical gynæcology and was a firm believer in the use of pencils of chloride of zinc in the treatment of metritis. Of recent years he has been best known by his researches into hypnotism and hypno-therapeutics in which he had a great belief.

The death is announced of Dr. Camille Dareste, Professor at the School of Anthropology. He was best known for his researches in embryology and was practically the founder of the science of experimental teratology, while his researches on the artificial production of monsters created very wide-spread interest. He was formerly the professor of medicine at Lille and some fifteen years ago came to Paris as director of the school for higher education.

Jan. 17th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

On the Legal Aspect of So-called Traumatic Rupture.

DR. KAUFMANN of Zürich, whose authority in medico-legal cases under accident insurance laws is generally acknowledged on the continent, has published an interesting article on the above subject. He lays full stress on the importance of an immediate and detailed medical examination after the accident and explains very lucidly the points of import to the medical practitioner who has to deal with such cases in the first instance. The number of cases brought before the law courts for compensation greatly exceeds the number deserving compensation as the patient often either fails to prove the traumatic origin or the recent occurrence of the rupture. Only 32 out of 400 German cases (in 1895) received compensation. Altogether there is only an average of from 14 to 20 cases in every 100,000 insured workmen. Relying on a careful examination of 200 legal cases Dr. Kaufmann comes to the following result. Certain cases of rupture are what the French term "*hernies de force*" or doubtless of traumatic origin; these should receive compensation. They all occur immediately after an accident or some unusual over-exertion; the sudden appearance and the accompanying severe pain are decisive for the diagnosis. The German Board of Insurance compensates a rupture retainable by a truss with a certain percentage of the wages previously earned, which percentage is higher if heavy labour cannot be permitted. This percentage refers to the wages of the workman at the time of the accident and is either paid as annuity for lifetime or capitalised. Radical operation, however advisable in particular cases, cannot be legally enforced.

Sanatorium for Consumptives.

The sanatorium formed to receive consumptive inhabitants of the canton of Zürich was opened on Oct. 30th and at present 60 patients are enjoying the sunshine it affords, situated as it is above the village of Wald, 900 metres (or about 3000 ft.) above sea level. The building, erected on 34 acres of its own land chiefly consisting of pine forest, is situated on a sheltered plateau and is fitted with all the modern improvements desirable and can receive 100 patients. The total cost of £22,000 is almost covered by voluntary contributions raised during the last four years. The patients pay from 2 to 4 francs a day according to their circumstances and a stay of from three to six months is obligatory. Only patients in the first and second stages of phthisis are admitted. The Cantonal Government contribution will average 1 franc per day per head and cover part of the working expense. This is already the fourth sanatorium of the kind erected in Switzerland during the last three years, the cantons of Bern, Bâle, and Glarus having got ahead of Zürich. Within a few years half-a-dozen other sanatoria will be erected in other cantons and nearly 1000 beds will be available for proper open-air treatment of Swiss indigent consumptives.

Anti-streptococcic Serum.

At a recent meeting of the Medical Society of Zürich Dr. Haeberlin reported on 4 cases of puerperal septicæmia in which he used Marmorek's *sérum anti-streptococcique*. Two very severe cases improved rapidly immediately after one or two injections and recovered; the other two terminated fatally.

Roentgen Rays in Cases of Phthisis.

Dr. von Beust mentions a case of doubtful phthisis with severe and prolonged catarrhal symptoms and hectic fever, bacteriological evidence being negative. The Roentgen rays

showed a darker shade of the whole left lung probably due to hyperæmia and a darker shadow in the centre and towards the apex of the same lung where two weeks later bronchial breathing made an appearance. Both the darker shadow and the bronchial breathing disappeared on convalescence. Professor Pernet of the Physical Laboratory of Zürich exhibited the skiagram.

Zürich.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Presentation of Morgagni's Bust to St. Thomas's Hospital.

IT will be remembered that at the Twelfth International Congress of Medicine and Surgery held at Moscow in the August of 1897 a body of British representatives, headed by Mr. S. G. Shattock, Pathological Curator of the Royal College of Surgeons of England, approached their Italian colleagues with a view to placing the bust of Giambattista Morgagni in the pathological theatre of St. Thomas's Hospital. The wish so expressed was cordially complied with and on their return to Italy the Italian physicians and surgeons referred to at once organised a committee to carry the project into effect. Calling to mind that the best likeness of Morgagni was that unveiled on May 27th, 1875, in the great quadrangle of the Palazzo degli Studi in Forli, they took immediate steps towards having it reproduced in marble and conveyed with all due care to its destination. The necessary funds were soon subscribed and the committee, presided over by Dr. Soffiantini, accepted the offer of Signor Salvino Salvini, the distinguished Bolognese sculptor and author of the bust in question, to make the reproduction himself free of charge out of compliment to the English medical men The work is now done and was unveiled on Jan. 8th in the Ospedale Maggiore of Milan previous to its being forwarded to London. Immediately below it runs the following inscription :—

JO. BAPTISTÆ MORGAGNI
IMAGINEM HANC
AUSPICE LONDINENSIUM MEDICORUM COLLEGIO
ITALI P. P.
ANNO D. MDCCCIC.

(This likeness of John Baptist Morgagni, under the auspices of an association of London medical men, was placed by Italian colleagues in the year 1899.)

The Population of Rome.

The census of Italy (mainland and islands) is in preparation under the superintendence of the Commendatore Luigi Bodio, Director-General of Statistics, and will, it is expected, see the light at the close of next year. Meanwhile from the Commendatore's Office on the Capitol we have a return as to the population of Rome checked up to Jan. 1st, 1899. The total just exceeds half a million souls—500,028. We have thus a measure of the increase of the population since Sept. 20th, 1870, when the Eternal City ceased to belong to the Patrimony of St. Peter and became the capital of United Italy. In that year Rome numbered 226,022 inhabitants, so that in twenty-eight years the population has more than doubled by the addition of 274,006 persons. Even under the Temporal Power the population was on the increase, though not in the same surprising ratio. At the beginning of the century, after the Napoleonic invasion, it sank to 47,882 inhabitants. Indeed, at various periods of its eventful history the city registered even lower totals. In 1527, after the siege and sack of Rome by Charles V., there were hardly 33,000 people within its walls, while in 1377, on the return of the Popes from Avignon, the inhabitants were reduced to 17,000 all told—that is to but 1000 more than the city contained at the death of Romulus. In the period of its greatest splendour, under the Emperors, the population of the city was estimated by millions, Vossius representing it as fluctuating between 8,000,000 and 14,000,000, according as allowance was made for the vast armies of slaves, and Hoch contenting himself with the humbler total of 2,265,000. The whole subject of the population of Rome in ancient times is, however, beset with difficulties, a masterly statement of which is given in the treatise of Pöhlmann published at Leipsic some fifteen years ago. Next century, if the present ratio of increase is maintained, it is expected that by 1950 it will reach a million.

Death of a Distinguished Anatomist.

Padua lost on Jan. 11th her able and accomplished Professor in Ordinary of Descriptive Anatomy, Dr. Gian Paolo Vlacovich. Born at Rovigo, though of Dalmatian parentage, seventy-three years ago, when the Venetian province formed part of the Austrian Empire, young Vlacovich studied in Germany and graduated at Vienna, having, especially in clinical surgery, earned the highest testimonials from his successive teachers, to several of whom he acted as assistant. Attaching himself to the Paduan school in 1853, he became a member of its teaching staff, rising ultimately to fill the chair of descriptive anatomy, in connexion with which he also held the post in the University Institute of Director of the Cabinet of Pathological Anatomy. His popularity with his students and colleagues was immense, based on remarkable expository power and on a genial address which on many occasions led to his acting as mediator between the academic authorities and the undergraduates. For these characteristics he was made rector and he discharged the duties of the office with consummate tact for six years. His literary productiveness was great and a selection from his numerous memoirs in anatomy and pathology—many of them of quite exceptional value—is in contemplation. They were in most cases read before the Reale Istituto Veneto di Scienze, Lettere ed Arti, of which he was not only one of the Forty effective members but also one of the 20 "pensionati." He died at his post—not even his fatal malady (malignant vesical disease) interrupting his regular duties in the anatomical chair. On the day of his death the University was closed out of respect to the deceased, and its rector, Dr. Achille De Giovanni, forwarded in its name a message of condolence to the Vlacovich family in Dalmatia.

Death and its Causes in Italy.

Not less instructive than interesting are the statistics just issued on the deaths which have occurred in the Italian Kingdom during the first six months of 1898 as compared with those during the corresponding period of 1897. The population of Italy is nearly 31,000,000, and the number of deaths from every cause during the first six months of 1898 was 368,096, as against 344,890 in the first six months of the previous year. This increase in the first-named semestral period is due especially to the epidemic, protean in form though called by one name—"influenza." The testimony of Italian physicians is unanimous as to the circumstance that while this disease caused directly only 3159 deaths in the first *semestre* of 1897 it was immediately responsible for more than double that number, 8370, in the corresponding period of 1898. Not only so, but the same professional authority testifies that in all probability it contributed to augment the number of deaths by bronchitis, acute and chronic (42,567 in the first six months of 1898 and 37,741 in the first six months of 1897) and that of deaths from acute pulmonitis (49,432 in the first-named period as against 41,453 in the latter). There was in the first six months of 1898 a notable increase in the number of deaths from cardiac and arterial disease, from cerebral apoplexy, from pellagra, from congenital asthenia, and from senile marasmus. There were 941 suicides in the first *semestre* of 1897, but that total had risen to 1090 in the corresponding period of 1898. Only one case of violent death in conflict with the *forza pubblica* (police or military) was registered during the first six months of 1897, while there were as many as 105 such cases in the first *semestre* of 1898. This increase is due to the sanguinary repression of the *émeutes*, euphemistically called "bread-riots," in Milan, Florence, and other cities in the first week of May last, and it is believed that the official return of the number of such deaths is considerably below the mark. On the other hand, it is reassuring to note the steady, continuous diminution registered for nearly ten years in succession in the deaths due to infective maladies, acute and chronic. Vaccination and revaccination, wherever systematically introduced and maintained, confirm the same experience in Germany and Switzerland, causing in Italy a reduction of deaths from small-pox from 489 in the one period to 209 in the other. The other diseases under the same (the infective) category tell a similar tale, the two periods respectively showing deaths by measles 4118 and 3077, by typhoid fever 5094 and 4496, by diphtheria 2767 and 2578, by "hypertussis" 4871 and 4107, by malarial fevers 3626 and 3058, by tuberculous maladies 29,089 and 27,714, by syphilis 1120 and 1066, and by hydrophobia 42 and 26.

Oysters and Typhoid Fever.

IN THE LANCET of Oct. 8th, 1898 (p. 965), I drew attention to the panic prevailing throughout the kingdom by the

rapidly strengthening conviction that oysters, consumed as they are all the year round and in such increased demand as to have lessened the care hitherto employed in breeding them, are a fertile source of typhoid fever infection. I have to announce that on Jan. 13th the Consiglio Superiore di Sanità met in plenary session to discuss not only the manufacture or adulteration of "mineral waters" (a widely diffused "industry"), but also the measures to be adopted for better safeguarding the public consumer against the risks of infective diseases contracted from oysters unhealthily reared. Certain new regulations to this end have already been in practice among oyster-breeders and these, too, came under consideration. The whole subject is one of pressing importance, as is evident from the space it occupies not only in professional but in the lay journals, and the conclusions of the Consiglio when made public will in turn be discussed with keenness and, it is hoped, with impartiality.

Jan. 14th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

The Past Year.

SINCE the British occupation of Egypt began in 1882 every year has been a memorable one in the regeneration of this old country which has been ruled over by so many masters, but the year just ended has been remarkable enough to merit special notice. It has seen the overthrow of the Khalifa, the conquest of the Soudan, the foundation of the first rational scheme for governing the old equatorial provinces, the beginning of the great dams in Upper Egypt, and an explicit declaration on the part of the British Government as to our fixity of tenure here. The year has been one of steady advance in the path of progress. The two reservoirs now being made at Assouan and Assiout will revolutionise the cultivation of many parts of Egypt and will form the greatest engineering work in this country since the piercing of the Suez Canal. The native courts of justice have for many years been persistently praised in official reports and this year they justified their existence by their dignified treatment of one of the most important criminal cases which has ever come before a purely native tribunal. It can seldom have happened in Mussulman history that a rich prince of the blood royal has been condemned to a long term of imprisonment for shooting at a princely relative. The railway has been extended from Alexandria to Assouan and will shortly connect us with the new Khartoum which is already only five days' distance from Cairo. The telegraph is working as far as Khartoum and once again between Berber and Suakin, while the post now reaches beyond Fashoda. Alexandria has been honoured by the arrival of one of Her Majesty's guardships and it is significant that it is the first time that a British guardship has been sent to any non-British port. The English public has lately discovered the apparent stability of Egypt and British gold is now pouring into the country for various new investments. But history will lay most stress upon the year's military events—the advance in the spring months, the fierce battle at the Atbara, the continuous stream of troops arriving all the summer and being pushed quietly up the river, the slaughter of the Dervish hordes, the successful generalship, the final uprooting of Mahdist tyranny, the great thanksgiving service held on the spot where brave Gordon fell, and then the discovery of Frenchmen at Fashoda leading to Blue-books and Yellow-books and much preparation for war.

Changes at Kasr-el-Aini.

"Everything comes to him who knows how to wait," and at last the promised reforms in the teaching staff of the hospital and medical school have been brought about. The two physicians and teachers of medicine are Dr. Sandwith and Dr. Toller (lately of St. Thomas's Hospital). The surgeons are Mr. Madden (from the Hospital for Sick Children, Great Ormond-street) and Mr. F. Milton (from Port Said), the former of whom at present undertakes in addition the charge of the skin and venereal departments. Two much-needed English residents have been appointed who do part of the out-patient work and the whole hospital is directed by Dr. Keatinge who has, however, no professional duties in the hospital. Dr. Scott remains in charge of the eye wards and all members of the staff constitute a hospital committee to assist the director. A similar committee exists in the school, where Dr. Symmers teaches pathology and bacteriology and Dr. Wilson teaches physiology. The subjects of hygiene, materia medica, and chemistry are taught by German colleagues in the English language which is now chiefly used both for lectures and for text-books. Only one member of the native staff now remains—as lecturer on midwifery. It is hoped that a new era has begun for the students whose curriculum has been reduced to four years. The school fees are not high for they only pay to Government £15 a year and they receive all necessary text-books gratis. It is hoped that they will shortly be given a football ground, for this is the English game to which they are most attached. Attempts are being made so far as the funds permit to improve the library and the school museums. The bacteriological laboratory is a large room hardly in need of improvement.

The Coming Year.

By great and long-continued economy the resources of Egypt have proved equal to the strain cast upon them by the necessity of administering the Soudan, but this year's budget shows very little balance for luxurious outlay. £2000 have been granted to the Education Department to establish an English section of the Law School which has up to the present been a great French stronghold. £3600 have been given to the Sanitary Department for feeding more pauper patients in hospitals and for increase of sanitary inspection. £2000 are allotted to the new Agricultural Society, together with 300 acres of good land for experimental purposes. It has up to the present been a reproach to England that this country, entirely dependent on farming produce, should have had no agricultural help from Government. Moreover, half the total revenue of the country comes from the land tax and this can only be paid if the crops are good. The English heads of Finance and Public Works have prepared a scheme extending over the next five years for work the cost of which will amount to £2,750,000 sterling. This sum will be advanced from the reserve fund and will be expended on irrigation works in Upper Egypt, drainage of land in Lower Egypt, railway improvements, and, to a much smaller extent unfortunately, on schools, prisons, and hospitals. Two small taxes have been remitted this year. The tax on carriages and draught animals only brought in £5000 from Cairo and was obviously unfair because it was the one remaining tax which was paid by natives and not by Europeans. The abolition of boat dues at Kasr-el-Nil bridge at Cairo removes a very natural grievance of the river population. In Europe the passengers who go over a bridge have to pay the imposed toll. In Egypt Ismail Pasha decreed that those must pay to whom the bridge was an obstacle and not an aid—i.e., those who go under it.

Cairo, Jan. 10th.

Obituary.

ROBERT PRINGLE, M.D. EDIN.,

BRIGADE-SURGEON-LIEUTENANT-COLONEL, INDIAN MEDICAL SERVICE (RETIRED).

WE regret to announce the very sudden death of Dr. Pringle which took place at his residence, Eliot Park, Blackheath, on Jan. 13th. Dr. Pringle after his retiremen from the Indian Medical Service in 1883 settled down in this country only to take up afresh the many sanitary problems which he had attacked in the North-West Provinces of India. The deceased officer was the son of the late Mr. W. A. Pringle, H.E.I.C.S., and was born in 1830. He took his M.D. Edin. in 1854 and joined the army in India the year before the mutiny. Owing to his absence from Cawnpore on duty at the time of the massacre at that station he escaped the fate of his brother officers, who were all killed. He was the author of considerable literature on sanitary subjects and on the climatic diseases of India. Amongst some of his more important papers were, "Ancient and Modern Methods of Treating Small-pox in India," "Leprosy in India," "Vaccination and Isolation," "Enteric Fever in India," "The Water-supply of India," and "Quarantine as a Preventive Measure against Cholera Invasion." He was an ardent supporter of sanitary congresses and never a meeting on his pet subjects passed at which Dr. Pringle did not attend and address

those present on the lessons which he had gained from his wide experience on sanitary problems in India. During the last few years he took a very keen interest in the suppression of the smoke nuisance and he had convinced himself that the best fuel to adopt towards the mitigation of this nuisance was gas. He studied the question very closely and came to the conclusion that the heating powers of gas were not utilised properly in the ordinary gas stoves of commerce. He therefore commenced a practical investigation of the subject with the result that he designed a gas-stove constructed upon the regenerative principle. In the elaboration of this invention he frequently sought the advice of our laboratory department and quite recently he submitted to us for experiment and criticism the latest model of the stove. In THE LANCET of July 25th, 1896, appears the report upon the first stove with the regenerative principle applied to it which Dr. Pringle designed. The result showed that the Omedwar stove, as it was called, secured absolutely perfect combustion and a maximum heating effect of the gas consumed. It proved very economical in working, giving a maximum efficiency of heat for a minimum consumption of gas. The most distinctive feature of the stove is that from beginning to end it gives not the slightest indication of gas being the fuel employed. The warmed air is quite free from that smell which characterises the majority of gas-heating appliances. Dr. Pringle was remarkable as an upright and conscientious worker; he possessed a singularly amiable and genial disposition and was most enthusiastic and persevering with any subject which he happened to take up. By the death of Dr. Pringle there has passed away one who largely devoted his life to the working out of problems in the interest and well-being of his fellow-men. He served for many years on the Lewisham Board of Guardians. Dr. Pringle leaves a widow and several daughters to lament his decease.

THOMAS COLE, M.D., F.R.C.P. LOND., M.R.C.S. ENG.

DR. THOMAS COLE died suddenly at his residence, 18, Circus, Bath, on Jan. 15th, through the rupture of a blood-vessel, in his 54th year. The deceased received his medical education at St. Bartholomew's Hospital where he was a distinguished student, being senior scholar and double Wix and Bentley prizeman. He graduated M.B. Lond. with first-class honours in 1866, taking the M.R.C.S. Eng. the same year, and in 1867 he was admitted L.R.C.P. Lond. The deceased obtained the M.D. Lond. in 1868 and was admitted F.R.C.P. Lond. in 1888, having taken the M.R.C.P. Lond. in 1872. Before coming to Bath, about thirty years ago, Dr. Cole was resident clinical assistant at the Hospital for Diseases of the Chest, Victoria Park. Dr. Cole, who was highly respected, had a large practice in Bath, being senior physician to the Royal United Hospital and honorary physician of the Penitentiary, and was also formerly physician to the Western Dispensary. The deceased leaves a widow and three children for whom much sympathy is felt.

UNIVERSITY OF OXFORD: RADCLIFFE TRAVELLING FELLOWSHIP, 1899.—An examination for a Fellowship will be held during Hilary Term, 1899, commencing on Tuesday, Feb. 28th. "Firstly, candidates must have passed all the examinations required by the University for the degree of Bachelor of Arts and for the degree of Bachelor of Medicine, and either have been placed in the First Class in one at least of the Public Examinations of the University or have attained some prize or scholarship within the University unattached to any college or hall and open to general competition among the members of the University. Secondly, every candidate shall before election declare that he intends to devote himself during the period of his tenure of the Fellowship to the study of medical science and to travel abroad with a view to that study. The Regius Professor of Medicine and the examiners shall, two months before the expiration of the second year after the election of each Fellow, present a report on the work done by him to the electors who may, if they think the report unsatisfactory, declare the fellowship forfeited." Intending candidates should send their names, addresses, and qualifications to "The Radcliffe Examiners, Radcliffe Library, Museum," on or before Tuesday, Jan. 31st.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the Second Examination of the Board in the subjects indicated at meetings of the examiners:—

Wednesday, Jan. 11th:

Anatomy and Physiology.—Robert Thomas Edwards, University College, Liverpool, and the London Hospital; Archibald Denize Spalding and Richard Burgess, London Hospital; George Walters Greene and Robert Horace Constable Owen Wisdom, Cambridge University and the London Hospital; John Norman Parrott, Harry Edward Clarke and George Bettinson, St. Mary's Hospital; Frederick Douglas Selmers Jackson, Arthur Walrond Soper, John Freeman Douse, and Herbert William Brown, Guy's Hospital; Hubert Liston Willcox, King's College, London; Joseph Walters, University College, Cardiff, and King's College, London; Hugh Reginald Dutton and George Perry Duprey, Middlesex Hospital; Edward Torriano Holland, St. Thomas's Hospital; Norman Howard Mummery, University College, London; Arthur George Hay Michel, Charing Cross Hospital; and Sydney Nelson Crowther, Westminster Hospital.

16 gentlemen were referred back to their professional studies for three months in both subjects.

Thursday, Jan. 12th:

Anatomy and Physiology.—Herbert Smale, John Gay French, and Charles Ryley, St. Mary's Hospital; Harold William Pank and Reginald Cheyne Elmslie, St. Bartholomew's Hospital; Adrian Francois Van Dyk, St. Bartholomew's Hospital and Mr. Cooke's School of Anatomy and Physiology; Richard John Morris, Queen's College, Cork, and St. Bartholomew's Hospital; Sidney Marshall Banham, Henry Mallock Prins, and Frederic Augustus Edmonds, University College, London; William Howard Edwin Stewart, Cambridge University and St. Thomas's Hospital; Arthur Allen Foster Clarke, St. Thomas's Hospital; Anthony Mavrogordato, Oxford University and St. Thomas's Hospital; David Morrow, Queen's College, Belfast, and Middlesex Hospital; Frederic Louis Henderson, Cambridge University and Middlesex Hospital; Henry Pennington Croly and Eric Walter Grogono, London Hospital; Myer Coplans and Charles Edward Gaitskell, Guy's Hospital; Ivan Joseph Roche, Charing Cross Hospital; and Isidore McWilliam Bourke, St. George's Hospital.

Physiology only.—Joseph Sharples, Cambridge University and St. Mary's Hospital; John Micklethwait, Firth College, Sheffield, and Mr. Cooke's School of Anatomy and Physiology; and William Robert Elliott, Cambridge University and Mr. Cooke's School of Anatomy and Physiology.

12 gentlemen were referred back to their professional studies for three months in both subjects and 1 in anatomy only.

UNIVERSITY OF CAMBRIDGE.—The Deputy Vice-Chancellor gives notice that a meeting of the electors to the Professorship of Pathology for the purpose of electing a successor to the late Professor Kanthack will be held on Feb. 11th at 2.30 P.M. Candidates are required to send their names with nine copies of their testimonials (if any) to the Vice-Chancellor by Saturday, Feb. 4th.

DIPHTHERIA IN LONDON.—The concluding four weeks of 1898 witnessed an amount of diphtheria in London which fell somewhat short of that in the preceding like period, whilst the registered deaths in December were much above the total of the November period. In the four weeks ended on Dec. 3rd there were two sanitary districts in London free from invasion by diphtheria; so also in the next four weeks, the totals of notified cases in the two periods having been 1084 in the earlier and 1045 in the later period, with respective averages of 271 and 261 per week. In the November period there were eight districts each with more than 50 notified attacks, amounting to an aggregate of 517, while six other districts had only 17 between them. The data in the December period showed only five districts with more than 50 notified attacks each and an aggregate of 386, while other five districts had only 10 cases in all. The 156 registered deaths from diphtheria in the November period were totals of four weeks of which each showed numbers falling below the corrected decennial average, and the case mortality resulting was 14·4 per cent. In the December period the several weeks gave totals of 43, 40, 46, and 47, these being respectively 15, 15, 2, and 1 below the corrected decennial average for the corresponding weeks of the years 1888–97. The aggregate of 176 deaths gave a case mortality of 16·8 per cent. In the Outer Circle the 65 deaths of the earlier period were replaced by weekly totals of 16, 21, 22, and 25, or 84 in all, in December, West Ham registration district alone claiming 8, 10, 12, and 10, or 40 of the 84 deaths. The persistence of fatal diphtheria in that section of suburban London is assuming serious import.

GATESHEAD MEDICAL ASSOCIATION.—The second annual dinner of this association was held on Jan. 11th, when 35 members and guests sat down. In the unavoidable absence of Mr. J. H. W. Ridley, the President, the chair was occupied by Dr. W. Mearns and the vice-chair by Dr. F. W. Newcombe. The toast of "Prosperity to the Gateshead Medical Association" was proposed by Mr. Rutherford Morison (Newcastle-on-Tyne), who expressed his sympathy with the movement initiated in the district by the association and his admiration for the way in which the work had been done. He thought that while the scientific wants of the profession were well supplied by the various societies there had hitherto been a lack of union amongst the profession which had allowed it to fall an easy prey to the exploiter. Dr. Blacklock, in replying to the toast, pointed out some of the many advantages which the union of the profession in the town had secured to its members and showed that the fear so often expressed as to the difficulty of obtaining the adhesion of every practitioner is to a great extent a bogey. The toast of "Our Visitors," proposed by Dr. Gilbert, was responded to by Dr. Grange of Harrogate and by Dr. Hunter, secretary of the South Shields Medical Practitioners' Association, which is worked on the same lines as the Gateshead Association. Dr. Cox, the honorary secretary, in reply to the toast of his health showed the rapid growth of the union idea in the district since the formation of the local association. South Shields, Tyne Dock, Jarrow, the Mid-Tyne District on the north bank of the river had all fallen into line and now a Durham County Association had been formed. Other toasts and music filled up a most successful evening.

HOSPITAL ACCOMMODATION AT GLOUCESTER.—A Local Government Board inquiry has been held at Gloucester before Dr. W. W. E. Fletcher, one of the medical inspectors of the Board, into an application by the City Council for power to borrow £15,000 for the purpose of erecting a contagious diseases hospital. During the epidemic of small-pox which occurred in 1895–96 the necessity for better hospital accommodation was painfully evident, while the danger which existed from the position of the old corrugated iron and wood buildings which had done duty for years right on the border of the city was manifest, and the corporation secured an ideal site on the western side of the city known as Vineyard Hill Over, which with the sanction of the Local Government Board they purchased some eighteen months ago. The provision of the proposed hospital is for an administrative block, two pavilions (each containing 6 beds for males and 6 for females, 24 in all), and an observation pavilion (containing 4 beds for males and 4 for females), thus providing for 32 patients. The administrative block is designed in excess of the present requirements in case any extension of the hospital is in future deemed necessary or to supply the need of a temporary building. Small-pox patients will not be treated, but the corporation have promised the Local Government Board that they will provide elsewhere for the purpose. A provisional tender has been accepted from Messrs. Bower and Co. to erect the buildings at a cost of £9588. The town clerk explained the whole of the circumstances to the inspector, and called the architects (Messrs. F. W. Waller and H. Medland) to speak as to the plans. There was no opposition to the proposal, but the clerk to the Rural District Council (Mr. L. G. H. Mayer) urged on behalf of the authority the advisability of provision being made for patients from the rural as well as the urban parts of the union, either by way of a joint hospital board or by the urban authority guaranteeing a certain number of beds for patients from the rural district, on terms to be arranged. Mr. Mayer proposed to call Dr. Bond (Medical Officer of Health for the rural district) and other witnesses in support, but the town clerk contended, and his contention was supported by the inspector, that the Rural District Council had no *locus standi*, though the City Council were still willing that negotiations which had been carried on for some time for providing joint hospital accommodation for the whole of the union should be continued. Major Griffith (chairman of the Health Committee of the Gloucestershire County Council) also urged on behalf of that body the desirability of a joint scheme for the urban and rural districts. The inspector said he would make a note of these remarks and embody them in his report to the Local Government Board. At a meeting of the City Council held on Jan. 10th it was unanimously resolved that, subject to the approval of the Local Government Board, the Council be recommended to have the four wards of the two fever blocks extended so as to provide for eight instead of six beds in each ward, and that the architects and town clerk be authorised to arrange with Messrs. Bowers and Co. to carry out such extension as additional work under their contract, and at the prices or rates specified in the priced schedule of quantities delivered by them. It was further decided that having regard to the proposed extension of the fever wards of the hospital, and in order to provide a margin for contingencies, the Council be recommended to apply to the Local Government Board to sanction the borrowing of £16,000 instead of £15,000 for the erection of the hospital.

AT Marlborough-street police-court on Jan. 18th Messrs. Spiers and Pond of the Criterion Restaurant, Messrs. J. Lyons and Co. of the Trocadero Restaurant, and Mr. Sedlmayr of the Spaten Beer Buffet were respectively summoned and fined £10 for failing to comply with a notice which had been served upon them to abate a smoke nuisance. This is eminently satisfactory for Piccadilly and we commend several establishments in the Strand—one or two within view of the windows of our offices—to similar notice from the authorities.

BRITISH MEDICAL BENEVOLENT FUND.—The annual general meeting of the above fund was held on Jan. 13th at the residence of the treasurer, Sir W. H. Broadbent, who occupied the chair in the unavoidable absence of Sir James Paget, Bart., the President. Dr. Samuel West, the honorary secretary for finance, presented the report of the committee and the financial statement for the past year. These showed that subscriptions amounting to £1192 8*s.* 6*d.* and donations amounting to £492 7*s.* 11*d.* had been received and distributed in grants varying from £5 to £18 to 150 out of 184 applicants. Interest on invested capital had yielded £2328 14*s.* 10*d.*, from which annuities of £20 each had been paid to 108 recipients of the age of sixty years and upwards. One new annuity had been created and 12 annuitants elected during the year. The resignation, on account of continued ill-health, of Mr. Joseph White, the honorary secretary for cases, was received with great regret and he was unanimously elected a Vice-President, Mr. W. E. Sargant being appointed his successor. Cordial votes of thanks were passed to all the officers of the fund and to the press, both lay and medical, the meeting being concluded by a special vote of thanks to Sir W. H. Broadbent who for many years has taken as treasurer a great and active interest in the affairs of the charity. Although the above figures show an increase upon the previous year's receipts the grant department is still a source of anxiety as most deserving cases have frequently to be passed over. The income of this branch is derived entirely from annual subscriptions and donations and the committee earnestly appeal to the profession and others to become annual subscribers. A donation of £5 or a yearly subscription of 10*s.* entitles the donor to the privilege of recommending cases. The books and accounts have been as usual exhaustively audited by a chartered accountant, Mr. E. F. Voelckher, who continues to act as honorary auditor of the fund and who draws special attention in his report to the extremely small working expenses, which are again, as they have been now for some years, under 5 per cent. of the receipts.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ANDERSON, E. L., L.S.A., has been appointed an Assistant Medical Officer for the Mill-road Infirmary of the West Derby Union.

BACK, ALFRED H., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the East Sanitary District of the Blofield Union, vice F. Cufaude, resigned.

BENNETT, HARRY C., M.B., M.R.C.S., L.R.C.P., has been appointed House Physician at the Sunderland Infirmary.

BONNIN, JAMES A., M.B., Ch. Adelaide, F.R.C.S. Eng., has been appointed House Physician to the East London Hospital for Children and Dispensary for Women, Shadwell, E., vice Elwin H. T. Nash.

BUTLER, JAMES, M.B. Glasg., has been appointed Junior Assistant Medical Officer for the Govan District Asylum, Hawkhead Paisley, vice Campbell Highet, resigned.

CHURTON, JOHN C., M.R.C.S., L.R.C.P., has been appointed Junior House Surgeon for the Stanley Hospital, Liverpool.

COLEMAN, ERNEST, M.B., B.S. Lond., has been appointed Assistant Medical Officer for the County Asylum, Rainhill, near Liverpool.

CORY, C. G., L.R.C.P. Lond., M.R.C.S., has been appointed a Medical Officer for the Seventh Sanitary District of the Newmarket Union, vice A. Graham, resigned.

FOULERTON, A. G. R., F.R.C.S. Eng., L.R.C.P. Lond., D.P.H. Camb., has been appointed Bacteriologist to the Middlesex Hospital.

HAMER, E. S., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Medical Officer for the Tyldesley Sanitary District of the Leigh Union, vice G. F. Dixon, resigned.

HAWTHORNE, C. O., M.B., C.M. Glasg., F.F.P.S. Glasg., has been appointed Medical Superintendent of the Graduates' College and Polyclinic, London.

HENDERSON, R. G., M.A., M.B., Ch.B. Aberd., has been appointed Senior House Surgeon for the Stanley Hospital, Liverpool, vice G. B. Robinson, resigned.

HIRST, W. J., M.B. Lond., has been appointed House Surgeon for the Hospital and Dispensary, Newark-upon-Trent.

HODGES, J., M.R.C.S., has been appointed a Medical Officer for the Edmonton Sanitary District of the Edmonton Union, vice C. D. Green, resigned.

JACKSON, T. DE C., M.D. St. And., L.R.C.S. Edin., has been appointed Deputy Coroner by the Hull City Coroner, in succession to H. Woodhouse.

JOHNSTONE, J. R. ST. GEORGE, M.B., B.Ch. Dubl. has been appointed a Medical Officer for the Elderafield Sanitary District of the Upton-upon-Severn Union.

JONES, CHARLES STURGES, M.R.C.S., L.S.A., has been re-appointed Medical Officer of Health for Chichester.

MAYNE, WILLIAM SYDNEY, L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer for the Plymouth Borough Asylum.

MILLS, R. J., M.B., C.M. Aberd., M.R.C.S., has been appointed a Public Vaccinator for the Thorpe St. Andrew District of the Blofield Union.

MOORE, F. H., L.R.C.P., L.R.C.S. Irel., has been appointed a Medical Officer for the Sibsey Sanitary District of the Boston Union, vice B. A. Smith, resigned.

PERROTT, C. J., L.R.C.P., L.R.C.S. Irel., has been appointed a Medical Officer for the Oldland Sanitary District of the Keynsham Union, vice R. W. Brimscombe, resigned.

POCHIN, F. L., M.B., C.M. Edin., has been appointed a Medical Officer for the Raynham Sanitary District of the Walsingham Union, vice A. B. Shaw, resigned.

SOLTAU, FENWICK W., M.D. Lond., B.S., M.R.C.P., M.R.C.S., has been appointed Clinical Pathological Demonstrator to Senior Students, London Temperance Hospital, Hampstead-road, N.W.

THOMAS, R. D., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Guilsfield District of the Llanfyllin Union, vice J. Gill, resigned.

WOODHEAD, S. A., B.Sc. Durh., Analyst for the Administrative County of East Sussex, to act as Public Analyst for the purposes of the Sale of Food and Drugs Act within the Borough of Hove.

YOUNG, R. A., M.D., B.Sc. Lond., M.R.C.P., has been appointed Medical Registrar to the Middlesex Hospital.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

CANCER HOSPITAL (FREE), Fulham-road, Brompton.—House Surgeon for six months. Salary at the rate of £50 per annum, with board and residence.

CHELSKA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Pathologist.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park.—Pathologist. Salary 100 guineas per annum.

CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY, Wakefield. House Surgeon, unmarried. Salary £90 per annum, with board, lodging, and washing.

CONSUMPTION HOSPITALS AND ORPHAN HOMES OF SCOTLAND, Bridge of Weir.—Resident Medical Officer. Applications to the Hon. Secretary, 141, West George-street, Glasgow.

FINSBURY DISPENSARY, Brewer-street, Goswell-road, E.C.—Resident Medical Officer. Salary £120 per annum, with a furnished residence in the Institution, and attendance, coals, and gas.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL, Hastings.—House Surgeon, unmarried. Salary £75 per annum, with board, residence, and laundry expenses.

LIVERPOOL DISPENSARIES.—Two Assistant Surgeons, unmarried. Salary £80 for the first year and £90 per annum afterwards, with apartments, board, and attendance. Applications to the Secretary, 34, Moorfields, Liverpool.

LONDON LOCK HOSPITAL, 91, Dean-street, Soho, W.—Anæsthetist for the Male Hospital. Applications to the Secretary, Harrow-road, W.

MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN.—Honorary Pathologist.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, Gower-street, London.—Lecturers.

MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House Surgeon, unmarried. Salary £80 per annum, with board, residence, and washing.

NORTHAMPTON GENERAL INFIRMARY.—Assistant House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, and washing.

ROYAL FREE HOSPITAL, Gray's Inn-road, London, W.C.—House Physician for six months. Board, &c., provided.

ROYAL SOUTH LONDON DISPENSARY, St. George's-cross, S.E.—Honorary Surgeon.

SEAMEN'S HOSPITAL SOCIETY, Greenwich, S.E.—House Physician for *Dreadnought* Hospital, Greenwich. Salary £75 per annum, with board and residence. Also Surgeon for Dispensary, 51, East India Dock-road, E. Salary £63 per annum.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer for six months. Salary at the rate of £50 per annum, with board, lodging, and washing.

STAFFORDSHIRE GENERAL INFIRMARY, Stafford.—Assistant House Surgeon. Salary £30 per annum, with board, lodging, and washing.

TOWNSHIP OF TOXTETH PARK.—Senior Assistant Medical Officer for the Workhouse and Infirmary. Salary £100 per annum, with board, washing, and apartments. Subject to certain conditions. Applications to the Clerk to the Guardians, 15, High Park-street, Liverpool.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea, S.W.—Ophthalmic Surgeon.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon for six months. Board, lodging, and washing provided. Gratuity £20.

WESTERN GENERAL DISPENSARY, Marylebone-road, London.—Second Honorary Ophthalmic Surgeon.

Births, Marriages, and Deaths.

BIRTHS.

CAMERON.—On Jan. 17th, at Elms-road, Clapham-common, S.W., the wife of Albert Cameron, M.B., C.M. Edin., of a son.

COPELAND.—On Jan. 10th, at 59, Warwick-road, Earl's-court, London, the wife of W. H. Laurence Copeland, M.D., of a son.

DURRANT.—On Jan. 10th, at Market Harborough, the wife of T. Arnold Durrant, L.R.C.P. Lond., M.R.C.S., of a daughter.

DUTCH.—On Jan. 17th, at 8, Berkeley-street, Berkeley-square, W., the wife of Henry Dutch, M.D., M.R.C.S., L.R.C.P. Lond., of a daughter.

HARGREAVES.—On Jan. 10th, at Akaroa, N.Z., the wife of W. H. Hargreaves, M.R.C.S., of a daughter.

JONES.—On Jan. 6th, at The Terrace, Barnes, S.W., the wife of A. Wentworth Jones, M.A., F.C.S., M.R.C.S., L.R.C.P., of a daughter.

RUDOLF.—On Jan. 15th, at Carlton-street, Toronto, Canada, the wife of R. D. Rudolf, M.D. Edin., of a daughter.

SARGENT.—On Jan. 16th, at 300, Commercial-road, E., the wife of G. E. H. Sargent, L.S.A., of a son.

SAUNDERS.—On Jan. 10th, at Berkeley Lodge, Shirley, Southampton, the wife of C. Howard Saunders, M.B., of a son.

MARRIAGES.

BRAINE-HARTNELL—BARKER.—On Jan. 19th, at Havering, Essex, by the Rev. Prebendary Dimond-Churchward, R.D., Vicar of Northam, Devon, uncle of the bridegroom, and the Rev. Canon Hudson, R.D., Rector of Gilling, York, Christopher Braine-Hartnell, M.R.C.S., L.R.C.P., of Cheltenham, son of the late Rev. G. T. Braine-Hartnell, M.A., to Constance Lilian, daughter of the Rev. J. C. Barker, M.A., Vicar of the Parish.

EVANS—CHAPPLE.—On Jan. 17th, at Holy Trinity, Brook-green, Arthur Vernon Evans, M.R.C.S., L.R.C.P., second son of Samuel Evans, R.W.S., Eton, to Pauline Chapple, fourth daughter of the late Robert Chapple, Deputy Surgeon-General.

HUCKLE—FARNFIELD.—On Jan. 12th, at St. Matthew's, Brixton, A. H. Headley Huckle, L.R.C.P. Lond., M.R.C.S., L.D.S. Eng., of Wellington-square, Hastings, to Grace Shore, only daughter of the late Dr. Walter E. Farnfield, of Brixton-road.

LITTLEJOHN—RIPLEY.—On Jan. 14th, at St. Mary Abbot's Church, Kensington, by the Rev. F. Shields, Vicar of Holy Trinity, Scarborough, Thomas Herbert, younger son of Sir Henry Littlejohn, Edinburgh, to Marion Janet, daughter of Henry Ripley, Esq., Wood End, Scarborough, and The Grove, Bishop Auckland.

SOPER—KNOWLES.—On Jan. 11th, at St. Matthew's, Bayswater, J. Hawker Soper, M.R.C.S., Plymouth, to Maria Seymour, widow of R. J. Knowles and daughter of the late Rev. G. Bellamy, D.C.L., R.N., Rector of Wark, Northumberland.

WEBSTER—KITCHEN.—On Jan. 14th, at S. Gabriel's Church, Willesden-green, N.W., Percy Lawrance Webster, L.R.C.P., M.R.C.S., L.D.S., of Margate, Kent, to Phœbe, youngest daughter of James Kitchen, of Cricklewood, N.W.

WOHLMANN—MADDEN.—On Jan. 10th, at St. John's, Blackheath, S.E., Arthur Stanley Wohlmann, M.D. Lond., of Gay-street, Bath, to Eugenia E. H. Madden, widow of the late Colonel Madden.

DEATHS.

BLASSON.—On Jan. 17th, at Bourne, Lincolnshire, George John Blasson, M.R.C.S., L.S.A., aged 61 years.

BRIGHT.—On Jan. 11th, suddenly, at Forest-hill, John Meaburn Bright, M.D., M.R.C.S., Vice-President of the British Medical Benevolent Society, aged 65 years.

COLE.—On Jan. 15th, suddenly, at Bath, Thomas Cole, M.D. Lond., F.R.C.P., aged 53 years.

EVANS.—On Jan. 8th, at his residence, Tanyronen, Portmadoc, Henry Evans, M.R.C.S. Eng., L.R.C.P. Edin., and L.S.A., aged 48 years.

FARR.—On Jan. 11th, 1899, at Penrhyn Lodge, Cambridge-park, Twickenham, George Frederick Farr, M.R.C.S., L.R.C.P. Edin., of Kennington, aged 66 years.

MACBETH.—On Jan. 3rd, at Rome, Surgeon-General Macbeth, retired, late 74th Highlanders, 10th Hussars, and 16th Lancers, in his 82nd year.

PRINGLE.—On Jan. 13th, at Eliot-park, Blackheath, S.E., suddenly, Brigade-Surgeon-Lieutenant-Colonel Robert Pringle, M.D., late Indian Army.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 19th, 1899.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Jan. 13	29·80	W.	....	56	55	43	42	44	Overcast
,, 14	29·90	WNW	0·55	67	49	41	40	41	Hazy
,, 15	29·99	S.W.	....	56	55	39	43	44	Raining
,, 16	29·49	S.W.	0·42	74	54	44	48	50	Overcast
,, 17	29·95	N.W.	0·10	60	50	36	36	38	Fine
,, 18	29·83	S.W.	0·16	62	55	38	49	50	Overcast
,, 19	29·61	S.W.	0·02	57	54	50	50	52	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat (2 P.M.).

TUESDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (25th).—St. Bartholomew's (1.30 P.M.), University College, (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (26th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (28th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (23rd).—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Mr. C. Wallace: Acute Suppurative Peritonitis.—Mr. P. J. Freyer: Two recent Cases of Impacted Calculus of the Ureter successfully Operated upon.

TUESDAY (24th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Paper:—Mr. R. C. Lucas: Gonococcus Joint Disease in Infants secondary to Purulent Ophthalmia, with twenty-three cases.

WEDNESDAY (25th).—DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND (20, Hanover-square, W.).—4.30 P.M. Informal Exhibition of Cases. 5 P.M. Paper:—Dr. Crocker: Recurrent Scarlatiniform Desquamative Erythema.

THURSDAY (26th).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—8 P.M. Card Specimens. 8.30 P.M. Papers:—Mr. H. Grimsdale: Rapid Changes in Refraction in connexion with Diabetes.—Dr. M. Davidson: On the Stereoscopic Examination of Skiagraphs of Foreign Bodies in the Eye and Orbit.—Mr. C. D. Marshall: Epithelial Implantation Cysts of the Iris.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Papers:—Dr. H. R. Crook (Margate): The Climate of Margate in Relation to Disease.—Dr. B. Cruickshank (Nairn): Notes on Nairn—chiefly Climatic.—Dr. W. Bain (Harrogate): The Action of certain Mineral Waters on the Quadriurate and Biurate of Soda.

FRIDAY (27th).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Mr. J. Hutchinson, jun.: Three Cases of Abdominal Section (*a*) for Ruptured Ovarian Cyst, (*b*) for Perforation of the Urinary Bladder, (*c*) for Traumatic Intraperitoneal Hæmorrhage.—Dr. Abrahams: Rheumatic Tonsillitis.—Mr. R. Morison (introduced by Mr. Lockwood): Patients showing Results of Stomach Surgery, with description of the operations performed.—Mr. W. G. Spencer: Tuberculous Cavities in the Lungs giving rise to Gaseous Metastatic Abscesses.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

TUESDAY (24th).—WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—4 P.M. Dr. T. D. Savill: Cases of Syphilitic Disease of the Nervous System.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3.30 P.M. Dr. Ferrier: Paraplegia.

WEDNESDAY (25th).—EVELINA HOSPITAL (Southwark-bridge-road, S.E.).—4.30 P.M. Mr. Eve: Clinical Demonstration on Surgical Cases from the Wards. (Post-Graduate Course).

THURSDAY (26th).—WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Abraham: Practical Points in the Examination and Treatment of Diseases of the Skin.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Abercrombie: Demonstration of Medical Cases. (Post-Graduate Class.)

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1898, which was completed with the issue of Dec. 31st, and the Title-page to the Volume, were given in THE LANCET of Jan. 7th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1898 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 6*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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A LITTLE KNOWLEDGE.

WE are indebted to the *Westminster Gazette* for extracting the following gem from the records of the Australasian Collective Examination held in Natal. In a paper on Health and Temperance the question occurred, "Write out some simple directions to be followed in cases of convulsions in infants." One answer ran thus:

"Put the infant quickly into a bath of boiling water up to the neck. Put ice on its head. Then give him a mild *epidemic*, followed by a tea spoonful of castor-oil."

ON THE CHEAP AT LLANTRISSANT.

THE Infectious Disease (Notification) Act of 1889 gave rise in its working to not a few difficulties and about four years ago the elucidation of the most prominent and general of these formed the theme of a series of articles in THE LANCET which has since been printed in pamphlet form (Difficulties under the Infectious Disease (Notification) Act. London: THE LANCET Office. 1895. 1s.) and which we have reason to know has been found valuable to many of our readers. We do not pretend that our remarks exhausted all the official and professional difficulties which have arisen or which may arise in connexion with a complicated piece of legislation. There remains a certain number of problems which cannot be solved save by reference to the actual circumstances which we made no attempt to deal with—questions which, though general in their bearing, present themselves for solution only at rare intervals. Upon several such points we have at different times been consulted since the issue of our articles and we know that there are others concerning which we shall be asked. Whatever reply has to be made we have always been anxious to point out that the Act is one where the customs that usually govern the relations of medical practitioners to each other must be observed in all matters of disagreement between the medical officer of health and the medical attendant.

We have not, perhaps, so much insisted upon a second point, but this to our mind is equally clear and we should be much surprised to learn that the authorities at Whitehall think in any way differently. This second point is that the medical profession deserve consideration and require assistance from the community as well as from each other in connexion with the working of the Infectious Disease (Notification) Act. One or two examples of this are very obvious. For instance, a medical officer of health cannot obtain entry into the dwelling where an infectious patient has been notified to him as residing without the permission of the public—that is, of the householder—to do so. Exactly as under ordinary circumstances he being a medical man would not think of seeing the patient of another medical man or making suggestions concerning diagnosis or treatment without being invited to express an opinion on these points by the regular attendant, so he would not think as a matter of courtesy of intruding upon another man's premises—even if he had the legal right—without signifying his intention to the owner and pointing out the need for the visit of inspection. And if courtesy is also necessary between the medical officer of health and the public, still more is it necessary between the practitioner and his patients. Notification depends upon the practitioner, and many persons have objections to members of their own family being notified as suffering from infectious disease. For all these people the simple answer that "it is the law and there is an end of it" is not sufficient, and tact is often required to make them see that the action which will follow notification is for their good individually as well as for the good of the community. The patient's family, the medical man, and the officials must all work harmoniously to carry out this Act with complete efficiency.

It is not for the pecuniary good of the medical men that there should be an outbreak of measles in the districts where they live, so that they would be able with a light heart to forego a part of the notification fees awarded them by Parliament and also incur risks of punishment for not notifying diseases as the Act demands. Medical men in a rural district do not make money by the prevalence of measles. (If the council think this, by the way, is it not silly to diminish the inducement of early notification?) As a matter of fact, every medical man in a rural district knows that an epidemic is very apt to leave him out of pocket. His work is enormously increased, but his remuneration, though in the aggregate larger, does not keep pace with his increased expenditure.

Now, consider the proposition of the Rural District Council of Llantrissant and Llantwit Fardre as mentioned in the brief letter of their clerk in the correspondence which follows. The council, says the clerk, contemplate adding measles to the list of notifiable diseases—on the whole a wise suggestion in the opinion of most medical men. To enable them to accomplish this reform the clerk is instructed to ask the medical men who would be concerned if they are willing to accept for themselves and their assistant one fee between them to cover all notifications in any one household. Dr. Davies's answer in response to the clerk's suggestion is admirable in every way and we refer our readers to it. In his moderation Dr. Davies makes no special claim for consideration for medical men but simply says that if other people will contribute in a similar way to the rates he will personally bear his share of the burden. He might have said much more. A spirit of hearty coöperation between the medical profession and the public is required for the working of this Act. It is not to the material advantage of the medical profession that the Act should be administered correctly; it is so administered by them because they are good citizens and truly desirous of stopping the encroachments of disease. Why, then, should the first idea of this rural council or any rural council when planning a development of work under the Act be to invite the medical practitioners of the neighbourhood to break the law with a view of obtaining smaller fees than Parliament has deliberately awarded to them. Why? The reason is sufficiently clear to us. Laymen have got into a habit of expecting medical service on the cheap. The extreme examples of this are the well-to-do man who robs the charitable funds of hospitals by obtaining his medical advice at the out-patient department when he could well afford to pay for it and the wealthy tradesman who shares with his poorer brethren, if he does not greatly deprive them of, the ill-paid services of the officer of a medical aid association. The action of the Rural District Council of Llantrissant and Llantwit Fardre has been dictated by a similar spirit. Something has to be done for the good of the community. Therefore let the laymen make the suggestions and take the credit of them, but let the medical men do the work at the lowest possible rate. This is always an ungracious attitude, but it is especially so when the medical services under the Infectious Disease (Notification) Act are in question, for here medical men have a right to expect the assistance of the public.

LLANTRISSANT AND LLANTWIT FARDRE RURAL DISTRICT COUNCIL: AN UNWORTHY SUGGESTION.

WE have received the following letters for publication. We commend Dr. Davies's thoroughly sensible reply:—

Pontypridd, 30th NOVR., 1898.

DEAR SIR,—The council contemplate adding measles to the list of notifiable diseases under the Infectious Diseases Act, 1889, and I have to ask whether you and your assistants would accept one fee for any number of cases which may occur in any one household. If this is not done the adoption of measles as a notifiable disease will fall through as the expense of notification will be too great.

Yours truly,

Dr. D. W. Davies, Llantrissant. WM. SPICKETT, Clerk.

[REPLY.]

The Firs, Llantrissant, Dec. 25th, 1898.

Wm. Spickett, Esq.,
Clerk to the Llantrissant and Llantwit Fardre Rural District Council, Pontypridd.

DEAR SIR,—I am in receipt of your letter of the 30th ult., and in reply I beg to state that I quite endorse the opinion of the Council and of their medical officer that the inclusion of measles in the list of notifiable diseases under the Infectious Diseases Notification Act, 1889, would unquestionably have the effect of saving life—especially infant life. But the prohibition by the Medical Council of the employment of unregistered medical men as assistants has so greatly increased the demand for qualified assistants that principals are at the present moment entirely in their hands. I regret that I cannot for that reason, were there no other, ask my assistants to notify diseases without being paid. Nor do I see why they, or either of us indeed, should be asked to forego a fee which has been fixed by Parliament after an exhaustive discussion of the question in Committee as a fair remuneration for our services, especially as any omission on our part to report would render each of us liable to a penalty of £2 for every case of default. Besides, I quite fail to see why the medical men alone should be asked to contribute to what would be practically a fund in aid of the district rates, while the council who would take to themselves the credit of the scheme would contribute nothing. In their generous and disinterested desire to confer this exclusive honour upon the medical men of the district the council seem to have wholly forgotten what was due to themselves. Personally I am quite willing to forego a *portion* of my *own* fee provided the members of the Rural District Council of Llantrissant and Llantwit Fardre will agree to contribute to the fund each of them a like sum, and as these gentlemen are by virtue of their office especially interested in all public questions affecting the district I respectfully invite them to do so. Then I am sure the appeal which they have sent forth to the doctors will meet with a hearty response. But as you put the case in your letter—and, I think, rightly put it—simply as a question of "life *v.* money," there can be of course to that question but one answer. Yours faithfully,

D. W. DAVIES, M.D.

QUARANTINE FOR DIPHTHERIA.

A CORRESPONDENT sends us the following question:—

A convalescent from diphtheria has paralysis of accommodation and pseudo-bacilli in the throat. May he with safety go to school or mix with other children?

The answer to our correspondent's question may be given without hesitation. The patient should not under the circumstances go to school or be allowed to mix with other children. The use of the term "pseudo-bacilli" is one involving considerable responsibility on the part of the bacteriologist. It is a term which has been used in different senses by different writers and until some measure of agreement is arrived at by pathologists as to the relations between the "pseudo diphtheria bacillus" and the virulent organism, we dare not take the responsibility of advising that a convalescent from a disease, shown by the occurrence of paralysis to have been true diphtheria, should be regarded as free from the capacity of carrying infection so long as even "pseudo-bacilli" persist in the fauces. Energetic local disinfection of the naso-pharynx will probably bring about their disappearance in a few weeks or even less.

DISTRICT NURSING.

To the Editors of THE LANCET.

SIRS,—I shall esteem it as a favour if you will be kind enough to tell me the best quarter to apply to for obtaining the services of a trained nurse for district work (country and colliery).

I am, Sirs, yours faithfully,

Jan. 1st, 1899. LE G.

*** Our correspondent must apply to the Secretary, Queen Victoria Jubilee Institute, St. Katherine's Royal Hospital, Regent's-park, N.W.—ED. L.

THE ETIOLOGY OF PLEURISY.

To the Editors of THE LANCET.

SIRS,—In a recent case of arbitration the question of the etiology of pleurisy cropped up. An old man, aged seventy-two years, received an accident to the thorax and suffered acute pain on the right side and shortness of breathing for nearly twelve months. Although he did not work he went about complaining of the pain in the right side and was taken to bed three weeks before his death with some cough. The death certificate was "Primary, bronchitis; secondary, heart disease." On making a post-mortem examination extensive pleurisy on either side was discovered, the right lung being firmly adherent throughout, and on the left side there were several recent adhesions. There was conclusive evidence that the man did not suffer from any chest affection for years past previously to the accident. It was held on the one side that pleurisy was due to the accident, being latent and dry, as it was not diagnosed during life and was the cause of his death. Such pleurisy may arise from compression or contusion of the thoracic walls. On the other side it was contended that the pain was due to bronchitis and shortness of breathing was due to heart disease. There was no plastic exudation in the bronchi and the muscular structure of the heart was healthy but with atheromatous degeneration of the aorta. The other side stated that pleurisy could not arise without a fractured rib or the wounds of the chest walls. They also stated that the theory of pleurisy arising from compression or contusion of the thoracic walls, as given by Dr. T. Clifford Allbutt—"Bruises of the chest walls," in Quain's Dictionary of Medicine—was an exploded idea and, in fact, the authority was an obsolete one and that recently some experiments were made where hard blows were dealt out on the chest without causing pleurisy. It would be interesting to the surgeons practising among factory and mining populations to know if the latter view is really accepted by the medical authorities. Since this arbitration I have had 2 cases of pleurisy under my treatment, 1 in a youth through a violent compression on the football field and in another through a violent pull while driving a coal-tram. As several such cases have occurred in my practice during the last fifteen years one feels bewildered at the development of such a theory. Probably some of your eminent readers with experience will throw light on the subject.

I am, Sirs, yours faithfully,

Treherbert, Dec. 31st, 1898. MONTAGUE D. MAKUNA.

MEAT AND MALT WINE.

(JOHN RILEY, PENDLETON, MANCHESTER.)

THE following analysis of a sample of this meat and malt wine appeared in THE LANCET of May 21st, 1898:—Total solid matters, 11·72 per cent.; mineral matter (containing phosphates), 0·53 per cent.; alcohol, by weight 16·46 per cent., by volume 20·24 per cent., equal to proof spirit 35·47 per cent. The amount of nitrogen proved to be 0·167 per cent. which is equal to 8·9 per cent. of albuminoids in the extract. We have recently received a further sample of this wine which on analysis gave the following results:—Total solid matters, 12·25 per cent.; mineral matter (containing phosphates), 0·42 per cent.; alcohol, by weight 16·46 per cent., by volume 20·24 per cent., equal to proof spirit 35·47 per cent. The amount of nitrogen proved to be 0·105 per cent. which is equal to 5·4 per cent. of albuminoids in the extract using the factor 6·3 in both cases. There is thus a distinct depreciation in the amount of nitrogenous principles although the total solid matters are slightly increased, the mineral matter being a little less than before. The alcoholic strength is exactly the same.

JUVENILE BICYCLISTS.

AT a meeting of the New York Academy of Medicine Dr. Elliott presented a case of obscure injury of the hip occurring in a boy, two years and eight months old, who had fallen from a tree two months before. Dr. Elliott stated that the child had ridden a bicycle frequently since he was taught by his father to ride when he was eighteen months old. His greatest distance had been four miles. The boy was 36½ in. in height and his weight was 31 lb. His bicycle weighed 11 lb.; diameter of wheel, 13½ in.; crank, 4 in.; wheel base, 26½ in.; gear, 46. He had ridden without trouble since the accident. His brother, four and a half years of age, began to ride a bicycle when three years old. He had actually made a twenty mile run and was in perfect health. Dr. Elliott, however, considered that at an early age the bones were soft and the ligaments undeveloped and unfitted to stand the special requirements of riding a bicycle and the result might be, as in the case of the patient, a relaxed ligamentous system. Bicycle riding by children tended to disproportionate development of the legs when compared with the arms.

THE OKONITE TRUSS.

CAN any of our readers kindly supply us for the information of a correspondent with the name and address of the present manufacturers of the Okonite Truss?

THE CARE OF DEAF MUTES.

F.R.C.S. Edin. wishes to be put in communication with those experienced in the care of, and understanding the management of, deaf mutes—where a young man (about twenty-five years of age) could be received for a short or long period from time to time. The patient is disobedient and troublesome at home. He is of gentle birth and a fair sum could be paid per week for his maintenance.

PARAFFINUM LIQUIDUM.

WE have received from Messrs. Stern Brothers, of 57, Gracechurch-street, E.C., a sample of paraffinum liquidum, a substance which appears for the first time in the British Pharmacopœia of 1898. It is perfectly transparent, colourless, inodorous, and tasteless, giving in the mouth only a mucilaginous sensation. It is quite stable at ordinary temperatures and has a general resemblance to glycerine but is less viscid. From its bland unirritating qualities and syrupy consistence it will evidently have a wide range of application in pharmacy.

A STORY OF TOUTING.

To the Editors of THE LANCET.

SIRS,—I fear the carrying out of the New Vaccination Act will be fraught with difficulty as was the carrying out of the Notification Act in that medical men will have an opportunity of practically canvassing personally for patients. One of the public vaccinators in my neighbourhood has been calling upon my patients and warmly urging his own claims upon them, spending as long a time as a half hour pressing them to allow him to vaccinate their children when they themselves had frequently asserted that they preferred the operation being performed by their own medical attendant. Further, my patients inform me that he told them that their other children had never been properly or legally vaccinated at all. Surely, Sirs, this is not in keeping with professional etiquette. To authenticate my statement I enclose for your private perusal the names of the patients with their addresses and also the name and address of the public vaccinator in question.

I am, Sirs, yours faithfully,

Jan. 16th, 1899. G. P.

*** We do not anticipate any widespread trouble of this sort. Under the working of the Infectious Disease (Notification) Act it was at first feared that similar difficulty might arise, but the good sense and good feeling of the medical profession have combined to prevent the frequent occurrence of unpleasantness. The facts detailed by our correspondent constitute a breach of medical etiquette, but perhaps the public vaccinator would, if he were asked, deny the assertions of the witnesses.—ED. L.

SKELETONS.

To the Editors of THE LANCET.

SIRS,—Some German newspapers report that a consignment of skeletons of dervishes have arrived in this country of exceptionally large size and beauty (*besondere grosse und schöne exemplare*). If this report is true and the skeletons are for sale we would be glad to know from where they can be obtained.

We are, Sirs, yours faithfully,

Jan. 16th, 1899. KROHNE & SESEMANN.

*** We have not heard of any such skeletons having arrived.—ED. L.

A MEDICAL GOLF TOURNAMENT.

A MEDICAL golf tournament has been arranged for this year on similar lines to that of 1898. Entries, with lowest handicap and subscription, 5s., should be sent not later than Feb. 6th to the honorary secretary, Mr. Rolf Creasy, Windlesham, Surrey.

Late Surgeon in the Army, &c.—We so often have to call druggists hard names for supplying poison without due precaution as well as to find fault with the existing regulations under which poisonous mixtures are sold that we are loth to condemn any act of precaution. If, however, our correspondent is certain that the druggist knew him to be a qualified and registered medical man, although not practising, we think the precaution was excessive.

Cymro.—The practitioner who was *ordered* by the coroner to make a post-mortem examination and attend the inquest is, of course, entitled to a fee of two guineas. We do not quite understand the position of the practitioner who was "requested" to help at the post-mortem examination. He is legally entitled to a fee of one guinea for his medical evidence.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received: *Warwick Times, Liverpool Weekly Courier, Public Opinion, Portsmouth Daily Mail, Staffordshire Advertiser, The Field, Morning Leader, Nottingham Daily Express, Scientific American, Times of India, Pioneer Mail, Architect, Citizen, Cork Constitution, Truth, Builder, Scotsman, The Irish News, Liverpool Daily Post, Daily Messenger, Todmorden Advertiser, Westminster Gazette, Bristol Mercury, Brighton Gazette, Yorkshire Post, Leeds Mercury, Newcastle Daily Leader, Manchester Guardian, Sanitary Record, Malvern Advertiser, Herifordshire Mercury, Mining Journal, City Press, Liverpool Journal of Commerce, Folkestone Express, Reading Mercury, Derbyshire Times, Uxbridge Gazette, Surrey Advertiser, Kingston and Surbiton News, Alliance News, Kentish Mercury, Rushden Echo, Weekly Free Press and Aberdeen Herald, Tamworth Herald, The Gardeners' Chronicle, Lincoln Leader, Madras Standard, Food and Sanitation, Manchester Courier, Colchester Telegraph, Bath Argus, &c., &c.*

Communications, Letters, &c., have been received from—

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